TEXTILE WORLD

McGraw-Hill Publication ..... OCTOBER • 1945

VICTORY LOAN

They finished their job . . . Now, let's finish ours—

BUY VICTORY BONDS

this

ue . . . **TEXTILE-PLASTIC LAMINATES**

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MONOTONY BECOMES A VIRTUE

In the manufacture of a Du Pont dye, repetition, even to the point of monotony, becomes a virtue. For Du Pont chemists insist that each lot be exactly like its predecessor.

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Du Pont Dyestuffs

DU PONT DYESTUFFS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

NEVER GIVE A DOLLAR A DAY OFF—BUY AND HOLD WAR BONDS

TEXTILE WORLD, Vol. 95, No. 10, October, 1945. Published monthly by McGRAW-HILL PUBLISHING CO., INC. (Bragdon, Lord & Division). Publication Office, 99-129 North Broadway, Albany, N. Y. RETURN POSTAGE GUARANTEED. Editorial and Executiv 30 West 42nd Street, (18) N. Y. Allow at least ten days for change of address.
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Only the Best of Machine Tooling is Good Enough to Meet Draper Requirements for X Series High Speed Looms

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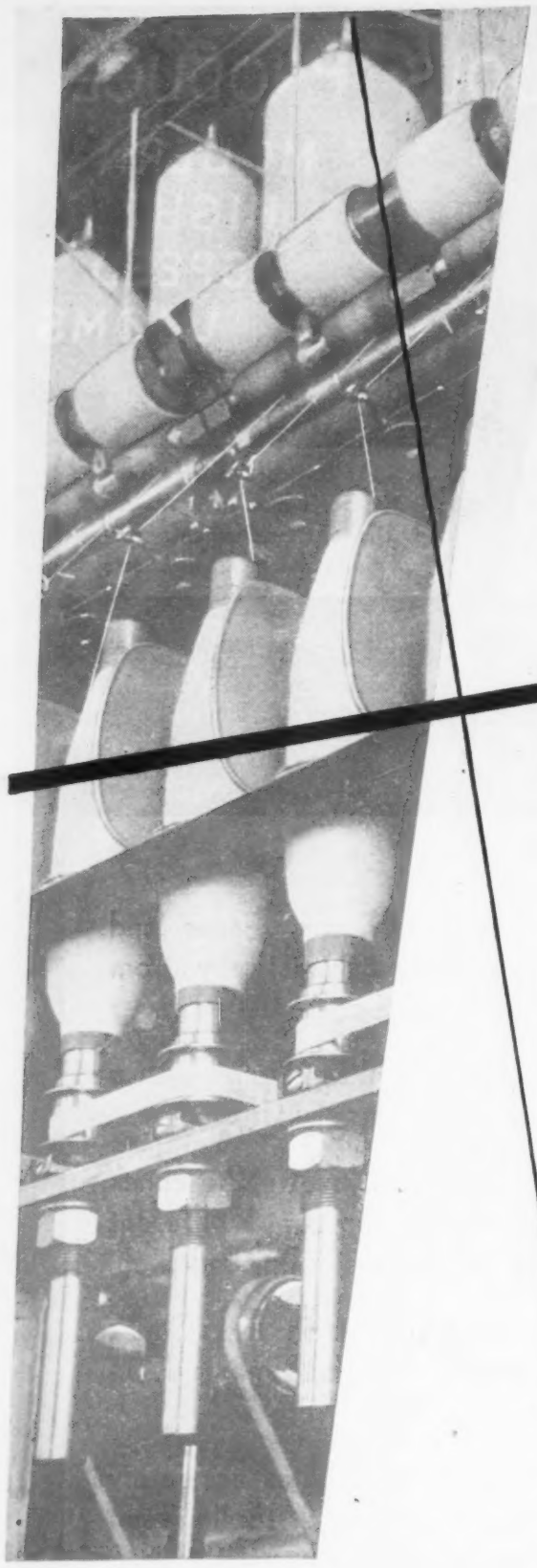

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★ Resists oxidation and thickening
★ Cushions spindle vibration
★ Resists hunting and lagging

TEXACO *Spindura Oils* do all these things. Consequently, they permit higher spindle speeds and heavier packages, lessen fogging and stock spoilage, assure more uniform tension and twist. They help spin a better yarn in bigger quantity.

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TEXACO

REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON EVERY SUNDAY NIGHT—CBS

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THE Long-Range View

Labor-Management Organization

"To settle a difference, start with some common ground on which both parties can easily agree." That rule must be applied if the labor-management conference scheduled to start in Washington on November 5 is to succeed.

If the conference becomes involved in a discussion of principles, it will fail; but if it limits itself to deciding upon an organization, it probably will succeed. An organization and its procedures must be considered first, just as mutually acceptable rules must be agreed upon before a game is played.

The labor-management organization which will result from the conference will be concerned chiefly with settling differences; but it will be best if these are future differences—some of which may be unforeseeable today—rather than past differences, most of which are almost completely obscured by emotions and complicated procedures. Any program for settling future problems undoubtedly will serve also to settle old ones.

The conference should start with a clean slate; and well it can, since the end of the war has altered greatly the effectiveness of the only over-all body, the War Labor Board.

Starting afresh, the first problem is to decide what is most needed. It is some means for avoiding disputes or, if they occur, settling them at once when and where they occur and between the primary parties. One of the big faults in much present machinery for settling grievances is the ease with which a small problem can run up the line (or short circuit the line) until it reaches a place where the only justification for handling it is on the basis that a "principle" is involved. Long before this, the small spark that started the conflagration is lost, even burned out.

Any rules designed to settle disputes at the lowest possible level would, to a degree, act to prevent their happening. A basketball player avoids committing a foul because the referee has the power under the rules of the game to penalize him at once and eventually put him out of the game if he persists in breaking the rules.

We must assume that some disputes cannot be settled locally, perhaps because the rules do not cover the subject or because one of the parties fails to honor the facts of the case. But appeals to higher authority should be rare. They should not be granted merely because one side throws its weight around to force a decision in its favor. They should follow channels, much as court procedures do; and petty matters should never reach the top.

Assuming, then, that some higher authority is definitely needed, why should it be a governmental body rather than one set up by management and labor? If the parties would keep their words and voluntarily abide by rules agreed to, there would be no need for a governmental agency. Past records, unfortunately, seem to indicate that the necessary good faith cannot always be counted on. A governmental agency is needed.

This brings us to a third consideration with respect to the organization for handling labor-management problems: should recourse to any federal agency set-up be mandatory or optional? Any believer in freedom for the individual will agree that it should be optional. Going further, recourse should not only be optional but also should not be easy. A governmental agency should not be called in until it is definitely clear that all efforts to solve the dispute at the point of origin have failed and that there has been no violation of the rules at that stage. The federal body should not come into the picture unless both parties agree that there will be no work stoppage or demonstrations during the time of federal conciliation, and that the decision of the conciliation body shall be final.

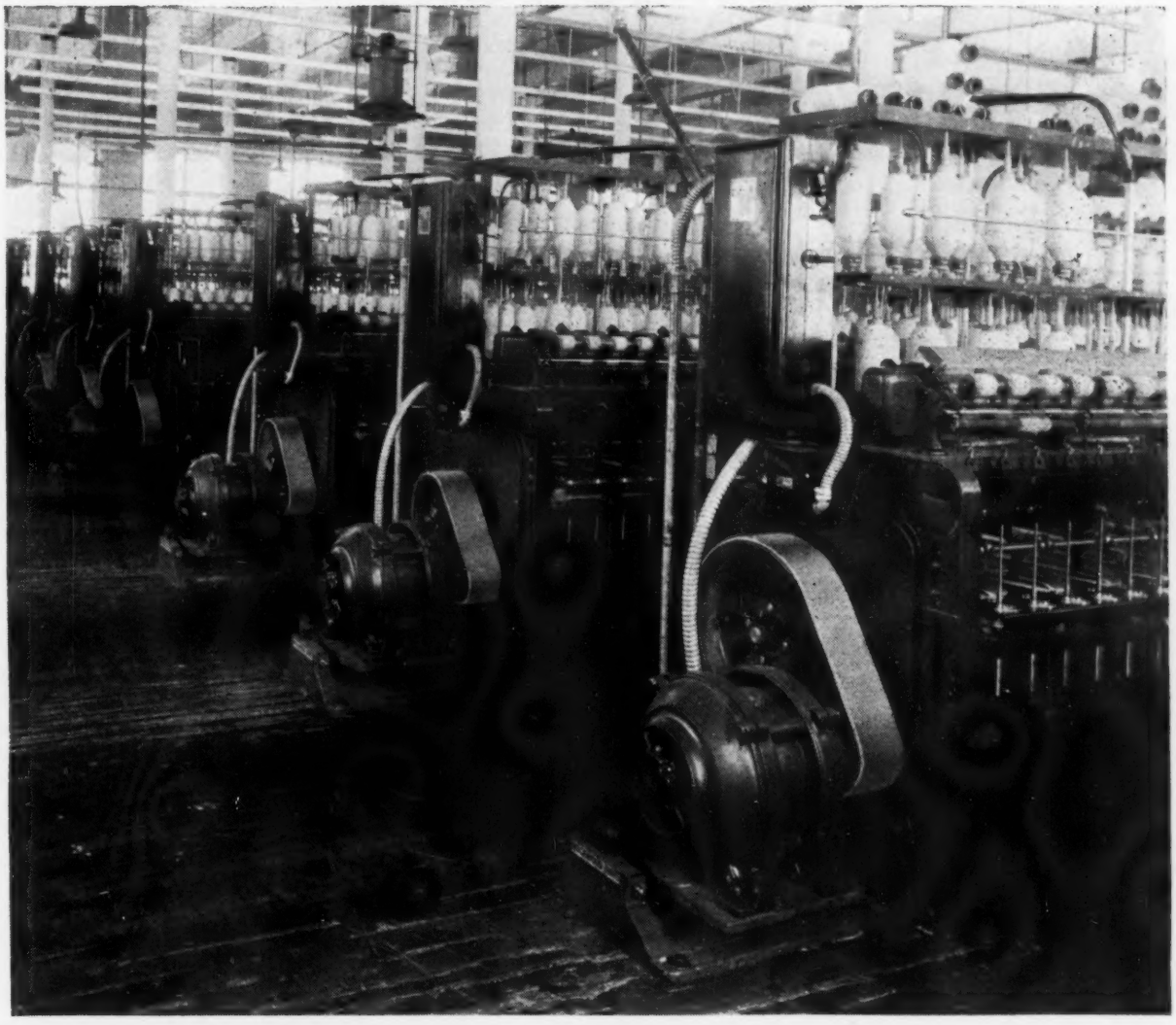
Going back a little, both parties, in addition to agreeing to call for help, should also state the criteria that should be used in deciding the case. For example, in the case of a wage-rate dispute, the criterion could be prevailing wages in the industry or in the area involved. (The federal agencies could decide what is the prevailing wage more easily than the two conflicting sides.)

Legislative action undoubtedly will be necessary following an organizational meeting—assuming that the Washington labor-management meeting will be organizational. Accordingly, it may be best to postpone any meeting on policy until after necessary laws are enacted and conflicting laws repealed.

A good organization is essential to the adoption and application of sound policies. A multitude of standardized federal policies should be avoided because of their snow-ball effect. At the most, there should be only a few policies of national scope.

C. H. Bendigo

To Keep Drive Efficiency Up
Consult RHOADS ENGINEERING SERVICE



Rhoads Engineering Service, based on long specialization in the manufacture and application of leather belting, has helped many textile manufacturers to secure real savings and lowered cost per yard of cloth through increased efficiency of their drives. We can help you too, in planning a new drive or changing an old one.

Tannate-Rockwood drives have proved their exceptional reliability during recent years in maximum production. Tannate belts have unusual grip. They resist moisture, machine oils and many weak chemicals. Little maintenance is required to assure long life.

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NEW YORK CHICAGO ATLANTA

BULLETIN!

How to Take a Reconversion Inventory of Your Electric Motors

☛ As new manufacturing equipment becomes more widely available, and as you reconvert your production toward a peacetime basis, you may be faced with an unprecedented problem of inventory-taking.

☛ You may have to determine — more quickly than such a job has ever been done before — the exact condition of every piece of existing equipment you propose to use in peacetime production.

☛ For about four years, far greater emphasis has been placed on setting production records than on keeping maintenance records; condition of equipment is often unknown. Because much equipment has been worked during wartime three and four times as many hours a year as in peacetime, calendar age may mean nothing. And repair has often depended on American ingenuity and baling wire.

☛ Here are some of the standards you need to determine which of your electric motors: (1) are okay as is, (2) need repair or new parts, (3) will shortly require replacement, (4) need reapplication.

☛ These standards generally apply to all makes of motors; when in doubt on any motor, consult its manufacturer.

1 START YOUR INVENTORY WITH THE RECORDS

Begin your motor inventory with the history of each motor; you'll save much time and effort . . . you'll be guided quickly to the units which most need attention. Written records and the mental recollection of foremen and maintenance men are the source of this information.

Check the *master maintenance records* (though in most plants this file is out-of-date and incomplete, because of wartime pressure on production); and get *reports from foremen* (in a small plant, it may be possible to interview each man; in a large plant, it may be more efficient to distribute blank forms, such as the "MOTOR CHECK LIST" on opposite page.)

Look into the service to which the motor has been subjected in wartime: has it been overloaded? underloaded? worked 3 shifts daily? allowed to go to work in spray, steam, flood, acids? has it had mechanical injury? has it stood idle, collecting moisture and dirt?

Knowing the answers to these questions will help you spot motors that may soon give you trouble . . . you can start your inventory there.

NOTE: All new motors built during wartime, under WPB limitation orders, contain minimum amounts of critical materials. Thus, unlike many prewar motors, they have been incapable of withstanding continued overload operation in the way you've come to expect high-grade American motors to do. Moreover, you've had to take motors at the ratings you could get, without much regard to the exact requirements of the application. Thus, many motors have been running harder and at higher temperatures than nameplate ratings call for. Obvious result of this combination of factors is shortened insulation life. So—*expect* trouble where wartime motors are misapplied.

2 THEN CHECK MOTORS IN OPERATION

Obviously, the easiest and most practical measure of a motor's present condition is the way it is now operating. You can't learn all you need to know about its probable future performance by observing it in use, but a motor does reveal certain symptoms of trouble while doing its job.

Check the power line voltage and frequency and compare with the voltage and frequency of the motor as stated on the nameplate. To perform properly, a motor must be supplied from a line whose characteristics correspond with those for which the motor was designed.

Check rpm — hand revolution counter makes this easy. Just remove cap, hold counter against end of shaft, and take a timed reading; compare with nameplate rating.

Take temperature readings — not by the "blistered hand" or "touch and yell" system, but *accurately*, with *thermometers*.

Find the temperature of the *motor* by taping or cementing thermometer to the stator iron . . . take the reading, and add 15°C. (The difference between the heat on the outside surface and the possible heat of the hottest part inside).

Compare motor temperature with temperature rise rating on the nameplate. Normally a 40° rise is considered acceptable; top temperature usually should not exceed 80°C.

Take the temperature of *bearings*

either by taping or cementing thermometer to the bearing housing, or by inserting it into the oil well. In general, maximum safe bearing temperature is 96°C. (Bronze bearings may take somewhat higher temperature safely. When in doubt, consult motor manufacturer.)

Listen for — EXCESSIVE HUM. May be caused by uneven air gap, and may call for replacement of bearings. Or it may be caused by loose laminations or unbalanced rotor. Note this hum while inspecting motor in operation; check for cause later, while making inspection of parts.

Note — VIBRATION. If excessive, this may be caused by either misalignment between shafts of motor and driven machine, or through transmission of vibration in driven machine to the motor. Run motor disconnected for check. *If vibration follows motor repair,* it's probably due to out-of-balance rotor.

Listen for — RAPID KNOCKING. May be caused by misalignment, with shoulder of shaft pounding against bearing end; realign set . . . and note this knock, check bearings when making inspection of parts.

NOTE: if excessive vibration, knock, or squeal follows re-assembly of motor, cause may be incorrect axial adjustment for float.

Look for — EXCESSIVE SPARKING OF BRUSHES. Check for cause when motor is taken down for inspection.

3 THEN CHECK THE PARTS

If time permits, you'll want to give detailed inspection to *every* motor that's been in strenuous service these past years. (You may be able to work this into your regular production schedule. Set up a system so that the electrical department may be notified whenever a machine is to be down. Disassembly and inspection of motors can be done then.)

And in cases where *history* of the motor or its *operating characteristics* indicate the likelihood of present or future trouble, you'll surely want to take a close look at the parts themselves.

A. FIRST — disconnect motor leads and uncouple motor from driven unit.

B. THEN — if excessive hum was noted while motor was in operation, use feeler gauge to check air gaps between rotor and stator. Difference of more than 20% indicates overworn bearings, sleeves, or journals. Check bearings as indicated below.

C. REMOVE end housing and lift rotor out, using a sling if rotor weighs over 75 pounds. If rotor is dirty, clean it with air hose (pressure not over 30 lbs), bellows, or vacuum cleaner, or swab it with non-inflammable solvent.

D. INSPECT rotor for abrasion; corrosion; discoloration (caused by overheating.) In squirrel cage motor, check also for loose or broken rotor bars.

E. IF ROTOR or armature is the wound type, check for loose banding. If any looseness is noted, band with new wire before putting motor back in service. If band assembly has not failed extensively — perhaps only a solder failure at one or two clips — repair can usually be effected simply by resoldering. Major rebanding, however, is a job for experts.

F. CHECK INSULATION — As motors get older, or as they operate continuously at high temperatures, insulation on coils tends to become brittle. It may start flaking off, cutting its insulating value. This may not affect motor performance seriously *except* that it may lead to short circuits or grounds, excessive vibration (out-of-balance rotor), or clogging of the air vents (leading to overheating) or abrasive wear from fallen particles. SO — check insulation visually . . . see whether pieces of insulation have torn or flaked off . . . and also make a megger (megohmeter) test. For a clean, dry motor at 75°C, insulation resistance in megohms, according to the American Standards Association, may be found by the formula:

$$\frac{\text{Rated voltage of motor}}{\frac{\text{Rating in KVA}}{100} + 1000} = \text{Insulation Resistance in Megohms}$$

G. CHECK BEARINGS — to remove ball bearings, use a puller, applying pressure to the inner race only, maintaining uniform pull all around, to avoid distorting the bore of the race.

Check bearings for excessive wear, scoring, or pitting.

To examine *anti-friction bearings,* first clean them thoroughly with kerosene to remove all old grease and dirt particles; then hold inner race and rotate outer race, feeling for roughness of action and listening for noise.

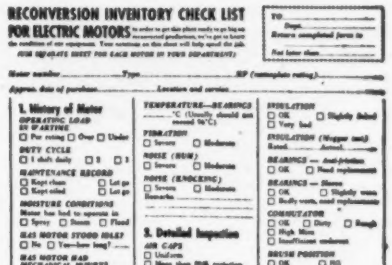
Inspect sleeve bearing clearance with feeler gauge. Normal clearances may be computed this way: take 0.003" as the basic tolerance . . . then add 0.001" for each inch of shaft journal diameter. Inspect journal surfaces; if scoring seems excessive, consider replacing.

If bearing shows no excessive wear, the hum of the motor in action may result from out-of-balance rotor or armature. Check this on parallel bars.

H. CHECK for cause of sparking. Check mechanical condition of parts. (For details, see Reconversion Inventory Kit, offered below.)

4 NOW MAKE THE APPRAISAL

With all the facts in hand — history, operating characteristics, condition of parts — your electrical department will be best prepared to assign this motor to its new role in reconverted production. Use check list forms like this —


RECONVERSION INVENTORY CHECK LIST FOR ELECTRIC MOTORS

for easy inspecting and appraising. Your nearby Allis-Chalmers district office or distributor will supply free copies of this Check List in whatever quantity you require.

CENTRIFUGAL PUMPS, V-BELT DRIVES, NEED INVENTORY TOO!

To speed your Reconversion Inventory of the most common industrial units, Allis-Chalmers has prepared a Reconversion Inventory Kit covering Electric Motors, Centrifugal Pumps, and V-Belt Drives. No big package, this kit is simply a set of Fact Sheets and Check Lists covering each type of unit, with suggestions for inventory procedure as outlined in these pages, but in somewhat greater detail.

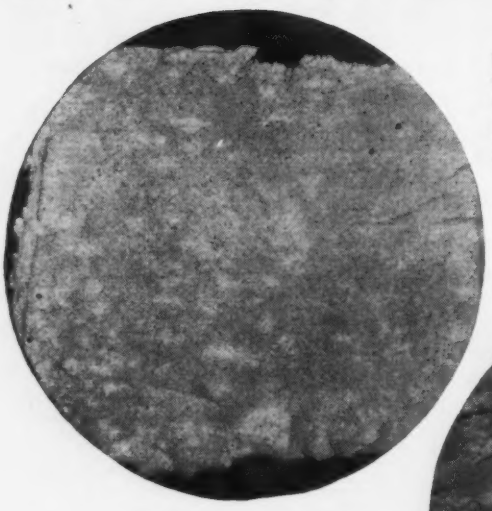
A 1901

GET THESE FREE FORMS

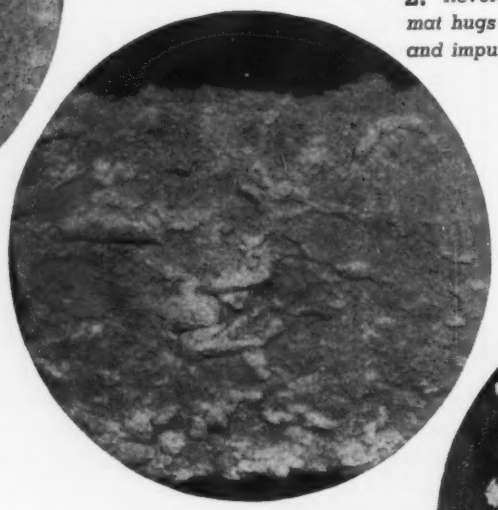
For your supply of Reconversion Inventory Kits, covering motors, pumps, and v-belt drives, call your nearest Allis-Chalmers district office or distributor or write Dept. 415, ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, WIS.

ALLIS CHALMERS

Air leaving the Saco-Lowell Air Filter is DUST-FREE



1. *Top side of the mat removed from the screen of the #6 Air Filter showing how the impurities from the air are used to build up an efficient filtering medium.*



2. *Reverse side of same mat showing how mat hugs screen preventing leakage of dust and impurities.*

3. *Showing fine particles of dust and other impurities that have passed through the filter mats, (Figs. 1 and 2)—but have been removed by the finely woven filter cloth in the terminal section.*

Remember, these microfine particles of dust are an ever-present menace to the health of your operators—are a fire hazard—and also can affect the efficiency of your equipment by settling on the moving parts of your machinery.

The Saco-Lowell Air Filter means the end of the dangerous, disease-breeding dust room. Now for the first time, the recirculating air in the opening and picker room can be fresh, clean, and free from impurities.

Tests have shown that in the Saco-Lowell Model 6 Air Filter the tightly woven terminal filtering medium removes from the air stream the most minute particles of *silica oxide* and other seriously harmful impurities. This principle of air filtration, developed by Saco-Lowell, has been effectively incorporated in the Model 6 assembly.

There can be no doubt that this new development will bring an end to the conventional dust cellar which is such a natural breeding ground for disease as well as a constant fire menace.

Our engineers have some facts on this Air Filter which we are sure you'll be interested in looking over. A card to any one of our offices will bring you the complete story.

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on
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FINE FRAMES
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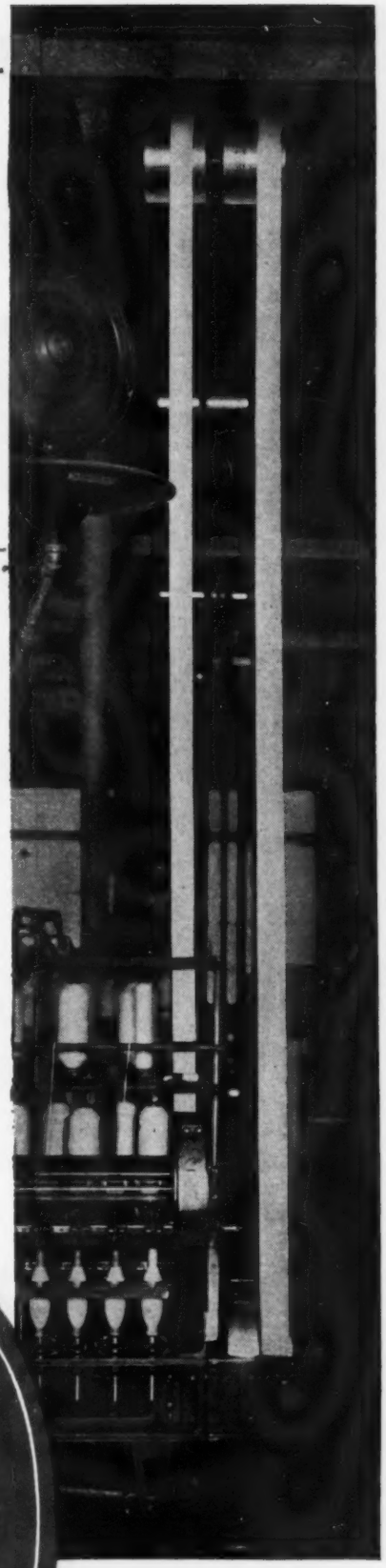
SPOOLERS
and other
heavy-duty drives



ON ALL mill drives handling heavy loads—drives where constant-speed, no-slip, trouble-free performance is essential to turning out a good product—there is no belt to compare with a Goodyear **Compass** Textile.

That is because **Compass** Textile has practically no stretch—far less than any other cord or fabric-bodied belt. The load is carried by a layer of heavy-duty rope cords spiraled continuously so that there is no splice. This patented endless construction is so much stronger, **Compass** Textile Belts are approximately 25% thinner than other belts of equal power rating—*an advantage that gives them far longer flex life.*

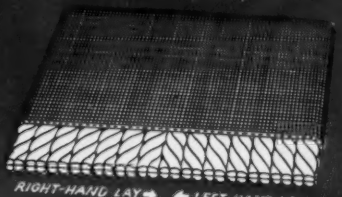
But best proof of **Compass** Textile's superiority is that in countless mills it has given *two, three, four times and more* longer service than any other belt has ever delivered—a fact many mill owners will confirm. If you want the same economical performance change to **Compass** Textile—now.

For complete information, consult the G.T.M.—Goodyear Technical Man—or write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GTM-Specified COMPASS CORD ENDLESS TEXTILE BELT

for heavy-duty mill drives



Note that the load-carrying cords on one side of the belt are right-hand twist—on the other side, left-hand twist. This patented Compass construction insures a balanced, true-running belt that will not "travel" on the pulleys.

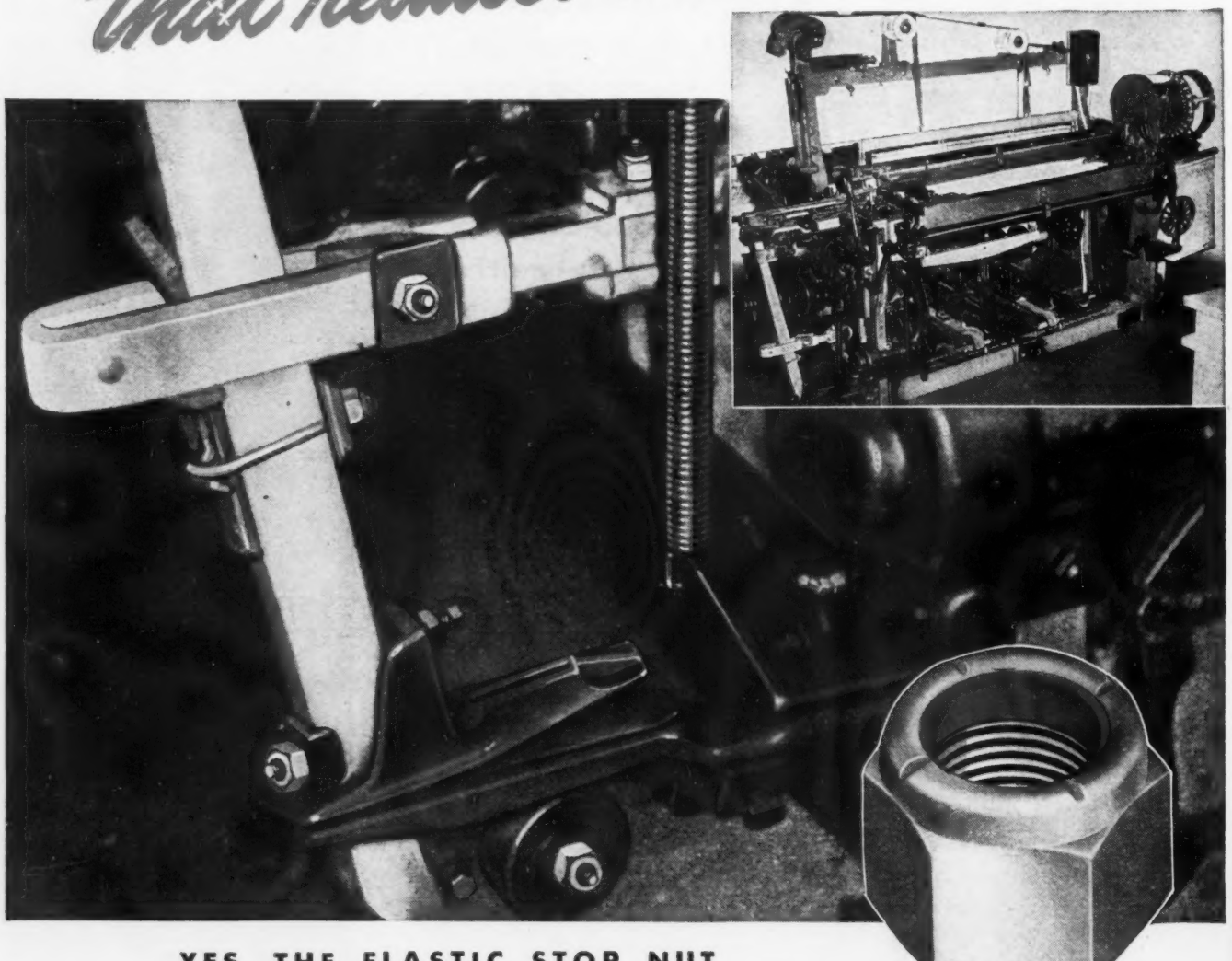
GOODYEAR

THE GREATEST NAME IN RUBBER

FOR HOSE, BELTING, MOLDED GOODS, PACKING built to the world's highest quality standard, phone your nearest GOODYEAR INDUSTRIAL RUBBER PRODUCTS DISTRIBUTOR.

Compass—T.M. The Goodyear Tire & Rubber Company

THE NUT *that reduces "Down Time"*



YES, THE ELASTIC STOP NUT

Textile men will recognize this picker stick as a potential trouble spot, a constant threat of interrupted production and high maintenance costs.

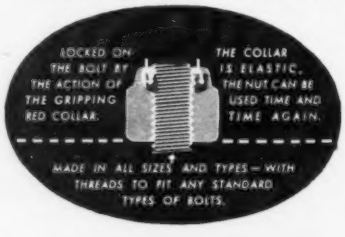
But loom fixers will recognize the red-collar remedy applied here — because there is growing familiarity with Elastic Self-Locking Stop Nuts, the famous red-collar nuts with the earned reputation for overcoming shock, impact and vibration.

Scores of Elastic Stop Nuts are used on a single loom, absorbing violent punishment in many places, as in the heel bolt and lug strap connections of the picker illustrated. In all its applications, the nut with the red collar proves it can hold fast and stay put.

The red collar of the Elastic Stop Nut eliminates the loosening effects of shock, impact and vibration. The collar is unthreaded and gauged slightly smaller than the bolt. It is made of tough, strong, durable material. The bolt threads force their way in, do not cut. The result is a two-sided friction grip on the bolt threads that grips firmly. And because the collar is resilient, the Elastic Stop Nut may be used over and over again.

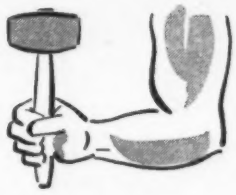
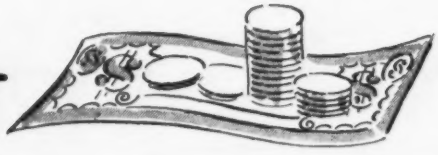
Solve your loose nut problems by equipping your machines with Elastic Stop Nuts and keep them running.

LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY


LOCKED ON THE BOLT BY THE ACTION OF THE GRIPPING RED COLLAR.
THE COLLAR IS ELASTIC. THE NUT CAN BE USED TIME AND TIME AGAIN.
MADE IN ALL SIZES AND TYPES — WITH THREADS TO FIT ANY STANDARD TYPES OF BOLTS.

ESNA
TRADE MARK

ELASTIC STOP NUT CORPORATION OF AMERICA
Union, New Jersey

Trade this  for this ; save and 

No more *forcing* of sheaves. Simple wrench operates Allis-Chalmers' "Magic-Grip" — *fastest mounting and demounting sheave on the market.* Saves time, money.

SEE HOW QUICKLY, EASILY THIS NEW SHEAVE MOUNTS AND DEMOUNTS

1 Place sheave on shaft. Slides on smoothly because clearance is provided by expanded bushing. There's *no* hammering — *no* forcing! Complete sheave and bushing unit comes intact—ready for quick, easy mounting.

2 Align exactly, using straightedge, (It's easy with this free-sliding sheave.) Then tighten three cap-screws; sheave is locked to shaft, *grips like magic!* No set screws to damage the shaft. Write A-C for Bulletin B6310.

RECONVERTING?

GET THIS NEW FREE KIT!

To help you find out how your present equipment will fit into future production, A-C offers a new free "Reconversion Inventory Kit" — Fact Sheets and Check Lists to speed your appraisal of V-belt drives, electric motors, and centrifugal pumps. Applies to all makes. Call your A-C distributor or district office, or write Dept. 00, ALLIS-CHALMERS MFG., Milwaukee 1, Wisconsin.

A 1855

Allis-Chalmers Texrope "MAGIC-GRIP" SHEAVES

To Our Customers and Friends

Effective July 1, 1945, The Terrell Machine Company executed a contract with The Terrell Company, a corporation of the State of North Carolina, under the terms of which The Terrell Company becomes the exclusive sales representative of The Terrell Machine Company for its bobbin cleaning, conditioning and handling machinery, and the products of its bobbin and spool plant.

In addition, The Terrell Company has taken over the exclusive sales representation of the rubberized fabric products, including pickers, lug straps, hold ups, bumpers, etc., made by Denman Tire and Rubber Company, Warren, Ohio.

The Terrell Company also has taken over the sales representation for Economy Balers made by Baler Co., Ann Arbor, Michigan, in the territory previously served by The Terrell Machine Company.

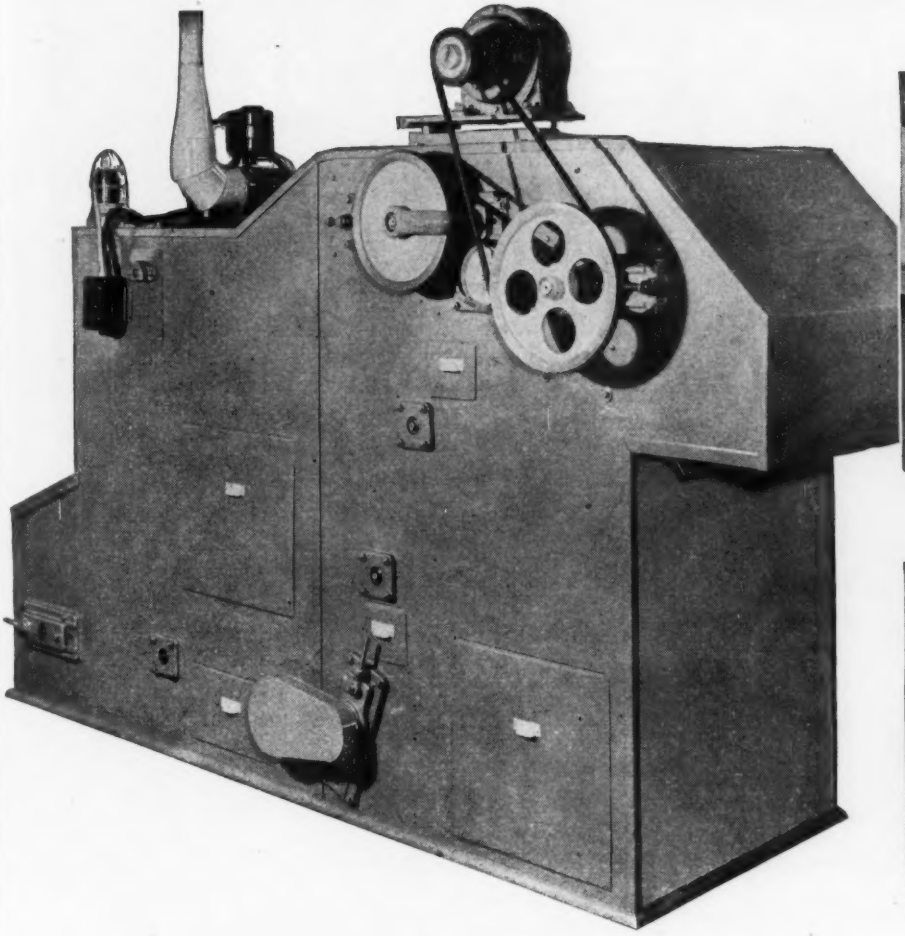
The Terrell Company has taken over the sales personnel of The Terrell Machine Company, including agency contracts with Geo. Thomas & Co., Ltd., Manchester, England; W. J. Westaway Co., Ltd., Hamilton, Ontario and Montreal, Quebec; E. L. Jasper, Brooklyn, N. Y.; R. D. Hughes Sales Company, Dallas, Texas; Roberto Zander, Buenos Aires.

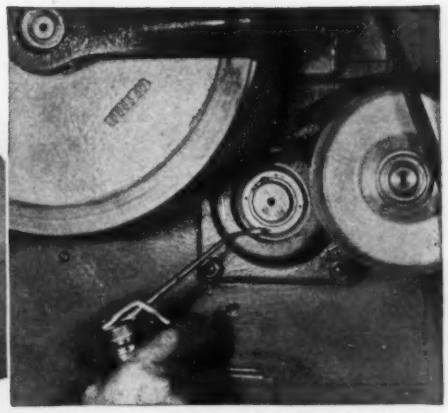
THE TERRELL COMPANY

Incorporated

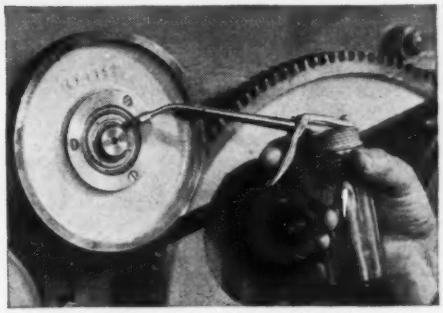
1200 NORTH CHURCH ST. CHARLOTTE 1, N. C., U. S. A.

How H & B Slashed Bearing Maintenance





See how simple it is to re-vitalize lubricant in these sealed bearings.



Lubricant is introduced without removing either the ball bearing or its seal.

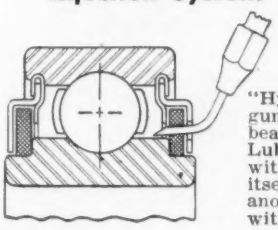
By installing New Departure Sealed Ball Bearings with simple provision for re-vitalizing the lubricant as needed, the H & B American Machine Company, of Pawtucket, Rhode Island, in its new Blending Feeders, has made a real advance in machine performance and maintenance.

These ball bearings are permanently sealed against entrance of dirt or leakage of oil—yet lubricant can be re-vitalized at long intervals, usually several years—*without removing bearings or seals.*

No danger of introducing dirt with the lubricant. The life of the bearings and of the machine is thus greatly enhanced and maintenance time and cost held to an absolute minimum.

5397

How the New Departure Injection System Works



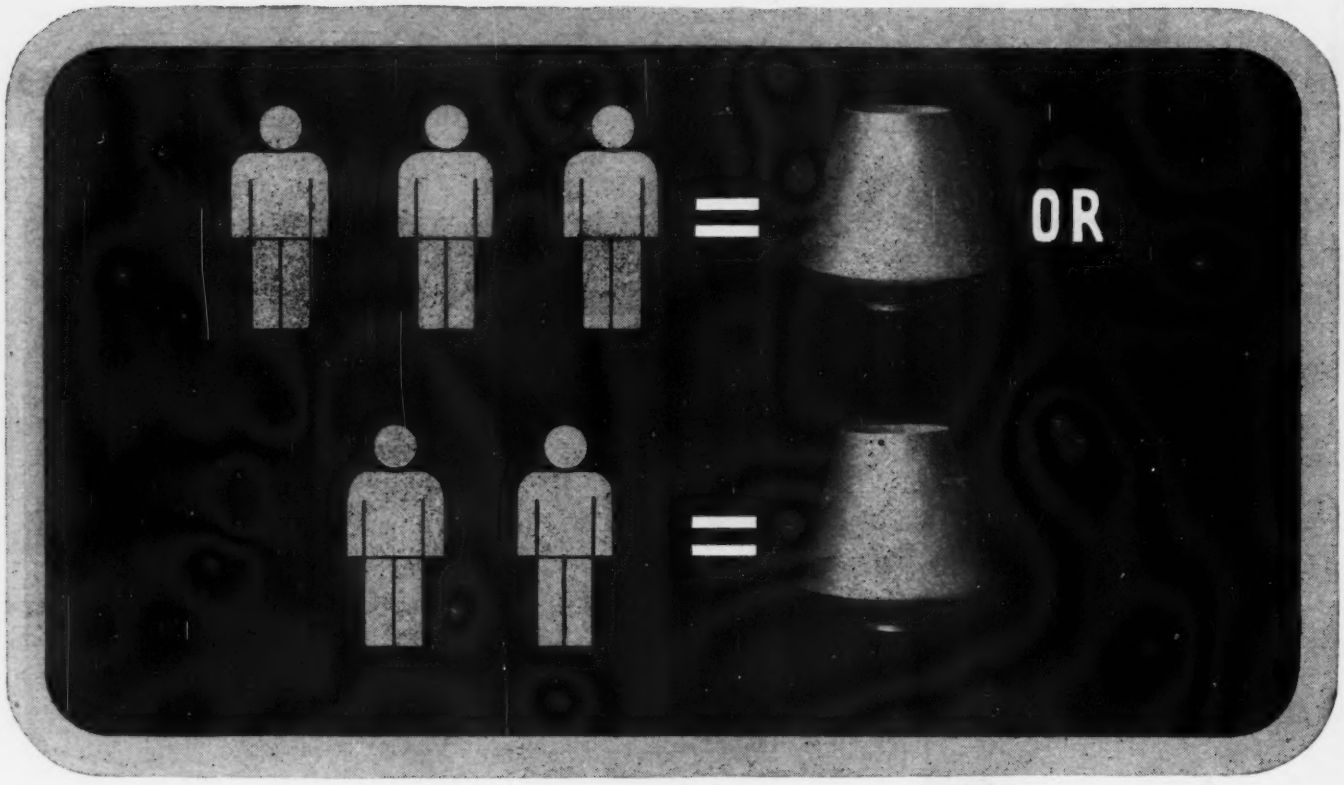
"Hypodermic" nozzle on grease gun is inserted through hole in bearing and penetrates seal. Lubricant injected, needle is withdrawn. Hole in seal closes itself and the bearing starts another long period of service without attention.

nothing rolls like a ball

NEW DEPARTURE

BALL BEARINGS

New Departure • Division of General Motors • Bristol, Connecticut



3 AND 1 OR 2 AND 1?

With obsolete winding machines, three operators are required to produce cones at the rate of one per given period of time. With Foster Model 102 winding machines, two operators will produce a cone in the same period of time. What is YOUR ratio of labor to production — 3 and 1, or 2 and 1?

OTHER SAVINGS

Of course, production and labor saving are not the only factors to consider; so note these other important savings:

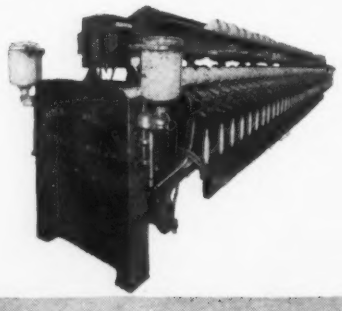
MAINTENANCE COSTS are very low, since specially trained, highly paid mechanics are not required to keep the Model 102 in working order, or to make adjustments.

REPAIR COSTS are cut, because the Model 102 is rugged, like all Foster Machines. They are as low as $3.50 per year per 100 spindles in some cases.

MACHINERY INVESTMENT is proportionately less, because of 100% increase in production over obsolete machines and because of the famous Foster FLEXIBILITY.

Ask for Bulletin A-91

FOSTER MACHINE COMPANY
WESTFIELD, MASS.
U. S. A.



Southern Office, Johnston Bldg., Charlotte, N. C. Canadian Rep., Ross, Whitehead & Co., Ltd., University Tower Bldg., 660 Ste. Catherine St., West, Montreal, Que.

FOSTER MODEL 102

FOR WINDING COTTON, WOOL WORSTED, MERINO, MERCERIZED, SPUN SILK AND SPUN RAYON YARNS

HOODOO SMASHERS!

America's newest and widest line of V-Belts—Allis-Chalmers' Texrope — solves problems that have hoodooed drives in almost every industry . . . see what they can do for you!

I ROUT THAT OLD BUGABOO, STATIC ELECTRICITY. I'M STATIC-RESISTING SUPER-7. MY BUILT-IN CONDUCTING ELEMENT CARRIES CHARGES TO THE MACHINE WHERE THEY'RE GROUNDED.

Texrope V-belts are available nation-wide through Allis-Chalmers Dealers and Sales Offices

IT PAYS TO MAKE

ALLIS-CHALMERS

YOUR V-BELT DRIVE HEADQUARTERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by A-C.

BULLETIN!

SPEED RECONVERSION WITH HELP OF NEW FREE A-C KIT!

Guide to "How to Take Reconversion Inventory" of Drives, Motors, Pumps

Help in the big job of reconverting for peacetime production is now offered to plants everywhere by Allis-Chalmers Mfg. Co., its district offices and distributors. To all who request it, we're sending the new "Reconversion Inventory Kit", planned to speed the task of determining the condition of your existing equipment — V-belt drives, motors, and centrifugal pumps — which will be used in reconverted production.

SUGGESTS PROCEDURE, STATES STANDARDS

Used by foremen, maintenance men, and engineers, the Kit is a real time-saver . . . leads efficiently to probable trouble spots, helps clear them up. Gives bearing tolerances, resistance formulae, etc., in compact, easily-used form. Check List appraisal charts help determine present and future condition of units inventoried.

HOW TO GET YOUR KIT

For your free Reconversion Inventory Kit, call your nearest Allis-Chalmers distributor or district office, or write Dept. 20, ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wis.

A-1910

ALLIS-CHALMERS MFG. CO.
Dept. 20, Milwaukee 1, Wis.

Please send Reconversion Inventory Kit free of charge to:

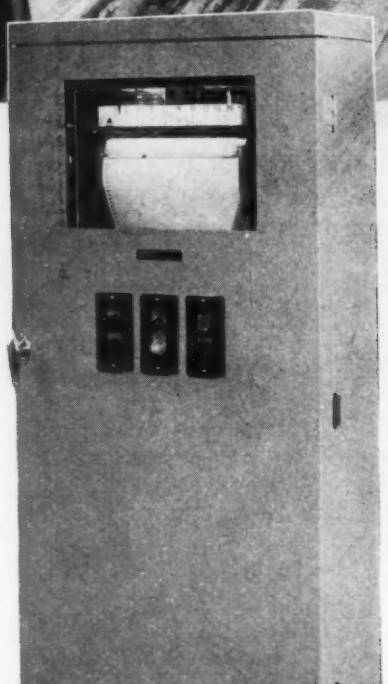
Company.....

Address.....

.....

Attn. of Mr.....

Control of MOISTURE CONTENT



Makes Me A Better Warp - - -

. . . When I am properly sized and dried—I can take it in the loom. I have the endurance to withstand constant chafing by the reed; the cutting of heddles and the stretching of the harness—Yes proper sizing and drying make me a strong and a better warp—the kind that increases weave room efficiency. But if I am over wet, I mildew and cause rust stains. If I am baked dry I am weak and slow up production.

"I and my fellow warps can come through without variation—increase production and profits—if you install the Brown Moist-o-graph slasher control system.

"The Brown Moist-o-graph controller is calibrated in terms of moisture content and continuously records the percentage of regain on a chart.

"All the slasher operator has to do is set the control point at the desired moisture content then I know I will become a warp strong and resilient. —I will weave hour after hour and speed up your weave room production."

Write for details of the Moist-o-graph slasher control system THE BROWN INSTRUMENT COMPANY, a division of Minneapolis-Honeywell Regulator Company, 4509 Wayne Avenue, Philadelphia, Pa. Offices in all principal cities. Toronto, Canada; London, England; Stockholm 16, Sweden, Amsterdam, Holland.

Boston, Mass., 799 Beacon St. **Atlanta, Ga., 4 No. Rhodes Center**

BROWN MOIST-O-GRAPH

SANDOZ PRESENTS *The color achievement of the month*

Mountain Blue by North Carolina Fabrics

The ruggedness of mountains topped in deep blue haze has been captured as the very spirit of the *Rogue, a *B.V.D. product fabricated by North Carolina Fabrics.

Sandoz, whose dyes have contributed to the development of many distinctive color creations, congratulates North Carolina Fabrics for giving the "he-man" an ultra-masculine color in Mountain Blue.

Illustrative of Sandoz' developments directed toward "thinking ahead with textiles" are the Pyrazol Fast colors which possess very good light fastness. Suitable for rayons and cottons, they have recently been increased in number by the addition of Pyrazol Fast Orange GLL and Pyrazol Fast Green CLL.

Maintaining a wide range of acid, chrome and direct dyes, as well as auxiliary chemicals for all natural and synthetic fibres, Sandoz has located its application laboratories for your convenience in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto . . . where stocks are carried. Other Sandoz branches in Chicago, Paterson and Providence.

Next month, Sandoz will salute another of its customers among the strong names in the textile industry.

*Reg. U. S. Pat. Off.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDO *thinks ahead with textiles* SANDOZ

CONES WITHOUT COBWEBS FROM MACHINES WITHOUT CAMS

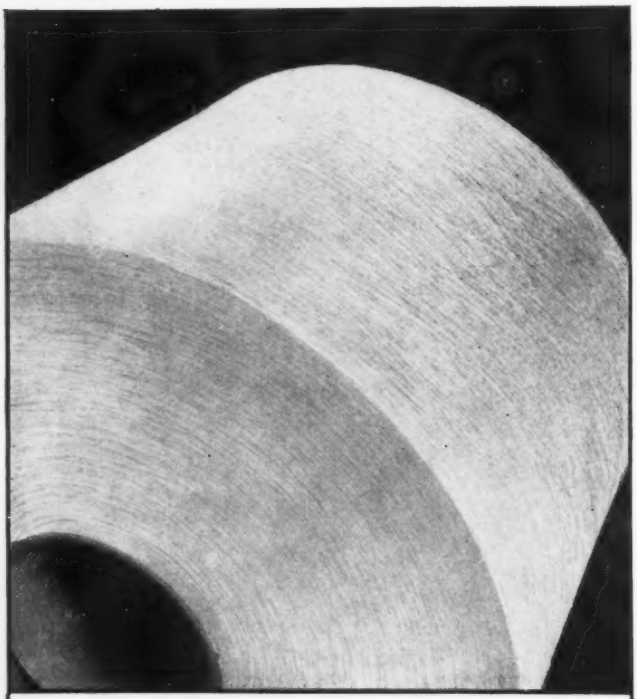
It's the Rotary Traverse — principally — that makes a yarn mill's *customers* delighted with their cones . . . and the yarn mill itself delighted with the lower costs of production.

The Rotary Traverse is an exclusive feature of the Roto-Coner* . . . a smooth, one-piece combination driving drum and traverse guide that helps produce knitting cones of superior quality at highest rates of output.

The Rotary Traverse may also be furnished with different groove arrangements to wind warping cones, dyeing packages and parallel tubes for twisting. Universal Winding Company, Providence, Boston, Utica, Philadelphia, Charlotte, Atlanta.

*Reg. U. S. Pat. Off.

23. 5. 16

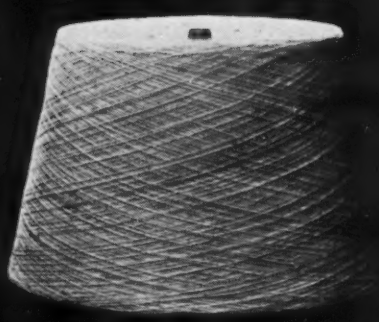


QUICK YARN REVERSAL MEANS FREE DELIVERY

The groove in the Rotary Traverse is designed to reverse the yarn quickly — without dwell — at both ends of the traverse, overcoming any tendency for the yarn to build up and roll inward to form stitches, underwinds, cobwebs. Yarn delivers freely from Roto-Cones without plucks or yarn sloughing off.

HIGHER WINDING SPEED WITH NO RECIPROCATING PARTS

On the Roto-Coner* there are no cams to restrict winding speed. When equipped for paper coning, the Roto-Coner* operates at 550 Y.P.M. Elimination of cams and other fast-wearing reciprocating parts means a saving in maintenance cost — which, on the Roto-Coner*, runs less than ½ of 1% on investment cost per year.



ROTO-CONER*

LEESONA

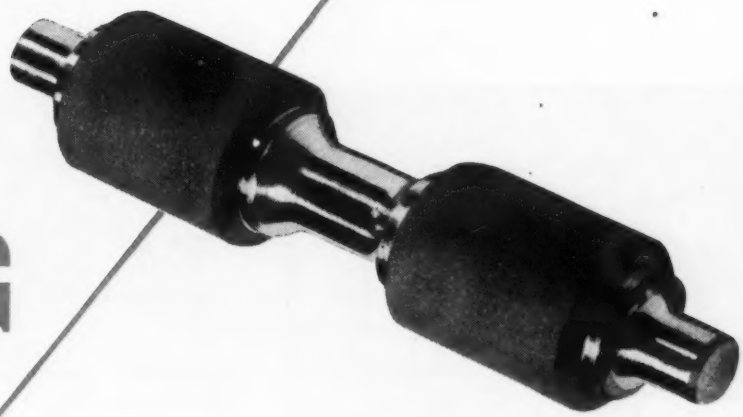
REG. U. S. PAT. OFF.

Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

This improved synthetic cot gives you

LONGER SPINNING LIFE



. . . because it retains its superior grip

MILL MEN find that Armstrong's Accotex Cots spin high quality yarn longer and more consistently than any other synthetic cot. This is because the synthetic rubber composition from which these cots are made is scientifically compounded with cork. Accotex Cots, therefore, positively resist slicking up; thus they need to be rebuffed much less often. And that means a longer service life and more even production from every Armstrong Accotex Cot.

See the list below for the seven additional important advantages offered by Accotex Cots. Then test the advantages of Accotex in your own mill. Results will show why Accotex Cots are now serving more spindles than any other synthetic cover. For samples, prices, and complete information on Armstrong's Accotex Cots, contact your Armstrong representative. Or write Armstrong Cork Co., Textile Products Dept., 8310 Arch St., Lancaster, Pa.

CHECK THESE EXTRA ADVANTAGES!

ARMSTRONG'S ACCOTEX COTS

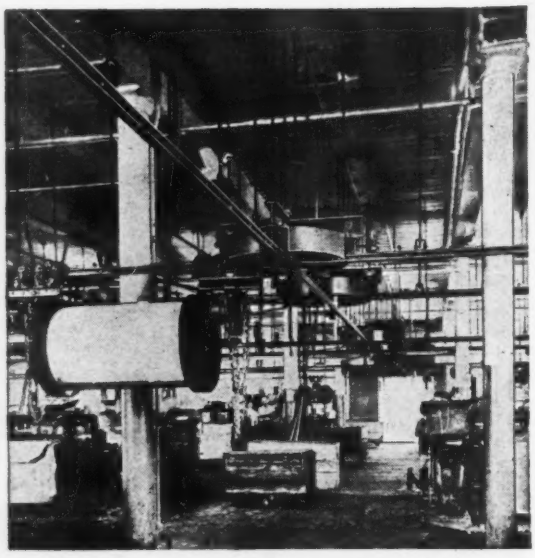
CORK COTS · ACCOTEX APRONS

1. **GOOD DRAFTING**—Accotex Cots resist slicking.
2. **REDUCED EYEBROWING**—Resistance to slicking minimizes eyebrowing.
3. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers and are nonsweating.
4. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.
5. **SOLVENT RESISTANCE**—Accotex Cots are not affected by oil, water, dyes, or textile solvents.
6. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams—can't break open in service.
7. **QUICK ASSEMBLY**—Accotex Cots are ready glued.

BETTER
QUICKER
MORE ECONOMICAL HANDLING

WITH

AMERICAN MONORAIL



Heavy beams are moved to looms. Special rotary switches furnish access to all MonoRail Tracks.

Peacetime operations demand the same production speed created by war.

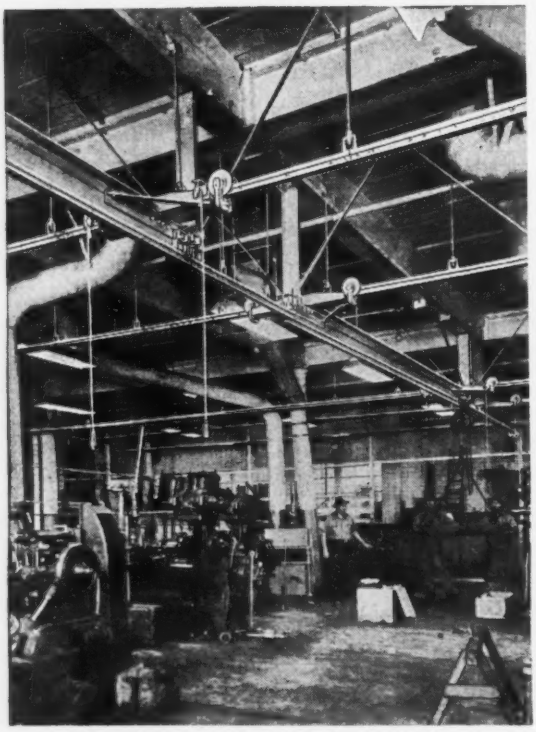
American MonoRail Overhead Handling Equipment will increase the speed of your operation, cut your overall costs, reduce accidents and fatigue—in short will turn untold non-productive hours into productive hours.

American MonoRail engineers have come up with solutions that have resulted in time and money saving operations in hundreds upon hundreds of cases, involving both simple and intricate, perplexing handling problems.

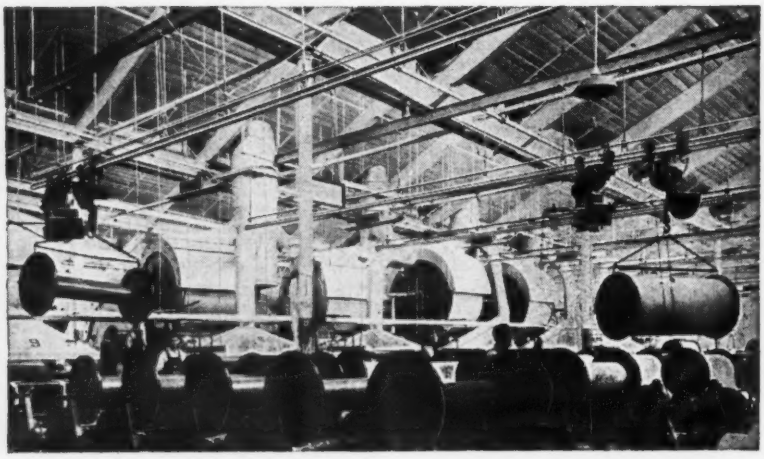
Regardless of size or type of application, American Mono-Rail engineers can help. Consultation with these men is available without obligation.

SEND for BULLETIN C-1, a 56 page book showing successful applications of American Mono-Rail systems.

WRITE TODAY



Simple hand-operated cranes aid in movment of loads in machine shop.



MonoTractors propel slasher beams into position for accurate spotting on creel.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

WAX MAKES THE DIFFERENCE

JOHNSON'S
WAX-FORTIFIED
Interior Finish
gives your walls these 4 PLUS features:
Rich, lustrous beauty that only wax-fortification makes possible.
Lengthened decorating cycle because of remarkable durability. Stays clean longer, resists stains, mars and scratches.
Easier cleaning when finally necessary, because of the wax. Film retains its gloss—resists caustic cleaners.
High light reflection longer—better light diffusion. Satin-smooth finish—no harsh glare.
Coming your way! Though not available today, this wax-fortified finish will be supplied just as soon as war restrictions on certain materials are lifted. Now is the time to get all the facts!

in this patented maintenance finish!

Wax impregnation—that's the difference—and that's why Johnson's Wax-Fortified Interior Finish gives you these important advantages! Wax-Fortified has wax *all through* the film. Its rich wax lustre lasts as long as the finish remains—doesn't dull when washed or cleaned, and is easier to clean when necessary. Light reflection values—high at the start—remain high, yet don't cause glare, because light rays are diffused.

Higher maintenance efficiency—lower maintenance costs

Wax-Fortified is a superior finish—a different finish that gives greater beauty and extra protection. It is made in white and a variety of colors that have broad coverage and great hiding power.

Refinishing is easy

When refinishing is finally necessary, the wax in Wax-Fortified does not retard adhesion and no special cleaning is required. You can recoat with Johnson's Wax-Fortified, or with ordinary paint.

Bakeries, food plants, dairies, factories, office buildings, department stores, schools and hospitals will find Wax-Fortified a boon to solving their painting problems. It will give them a better finish and greatly simplify maintenance.

For full details, mail the coupon today!

★ *Now! Buy VICTORY Bonds—and hold what you have!* ★

Made by the makers of

JOHNSON'S WAX

A name everyone knows

S. C. JOHNSON & SON, Inc., Racine, Wisconsin
S. C. Johnson & Son, Ltd., Brantford, Canada

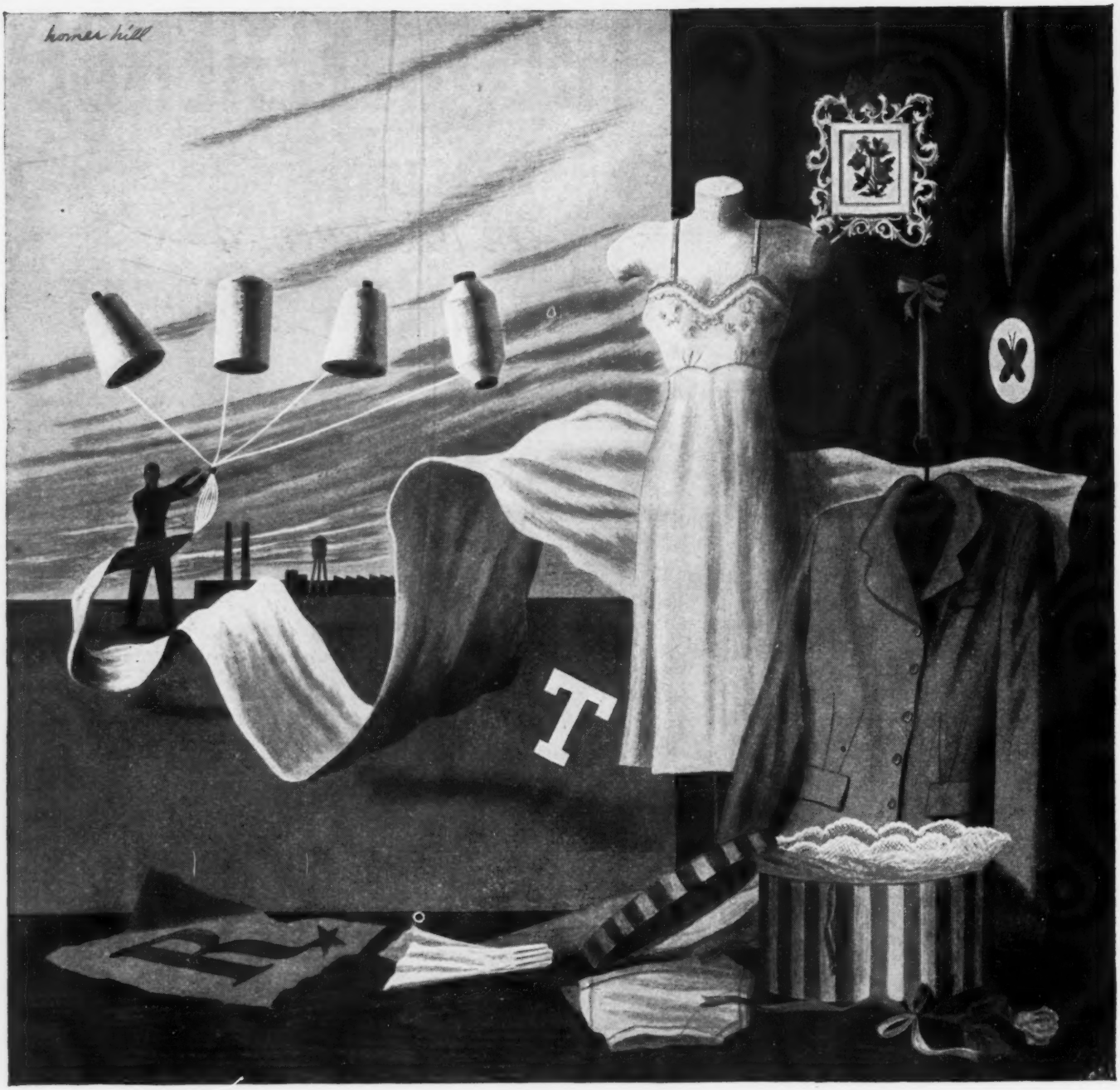
S. C. Johnson & Son, Inc., Dept. T-105
Maintenance Products Department, Racine, Wis.

Gentlemen: Yes, I'm interested in what "Wax-Fortified" will do for my walls. Please send the "What's Ahead in Paints" brochure.

*Name*_____

*Address*_____

*Business or institution*_____



*RAYON...PRODUCER FOR ALL

Rich and poor alike receive the many benefits of rayon.

Impartially, rayon flows from the spinnerets to both ends of the income scale.

High fashions...decorator designs for the fastidious few...have found expression in rayon.

But luxury at a low price for the many has always been rayon's greatest contribution to our high living standards. As one of the nation's great industries,

Rayon pays out to millions the wealth that eventually works its way back to Rayon.

Tu-bize rayon

TUBIZE RAYON CORPORATION · 2 PARK AVE., NEW YORK 16, N. Y.
Acetate and Viscose Rayon Yarns and Fabrics

Nylon Hosiery Manufacturer Praises

DU PONT Color Conditioning

DAVENPORT HOSIERY MILLS, CHATTANOOGA, TENN.

From the Du Pont File of TRUE CASE HISTORIES

J. T. Johnston, V. P. of Davenport Hosiery Mills, Inc., writes:

"We have finished painting the inside of our entire mill according to the Du Pont Color Conditioning Program worked out by your color specialist. The results are very pleasing.

"The color arrangement has contributed considerably to improved morale ...has relieved eye strain.

"We have received a number of favorable comments from employees and from visitors. We have obtained a good paint job and a well worked out color arrangement that has produced beneficial results."

DOZENS OF TEXTILE MILLS have already proved the practical value of Du Pont Color Conditioning in increasing production and improving employee efficiency.

Color Conditioning is a scientific plan that shows how to use color functionally throughout your plant—to reduce eye strain and fatigue, to salvage waste light. It helps eliminate personal injuries, fosters better employee-management relations.

Plan today for a more efficient, more productive, safer plant. Increased production of Du Pont Color Conditioning Paints will enable you to put this proved program to work in the very near future. Write: E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Del.

DU PONT
REG. U. S. PAT. OFF.

COLOR CONDITIONING

PAINTS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

... that's *Tufferized* Card Clothing

Careful as it might be, no "before-school" inspection by mother could ever match the thorough work of Tuffer inspectors. Every day Tuffer inspectors make certain that *50 million points* of card clothing wire are uniform and ready to give you efficient, unvarying carding!

From foundation to the final inspection, *master craftsmen* are responsible for the making of Tuffer Card Clothing!

Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

TUFFER CARD CLOTHING

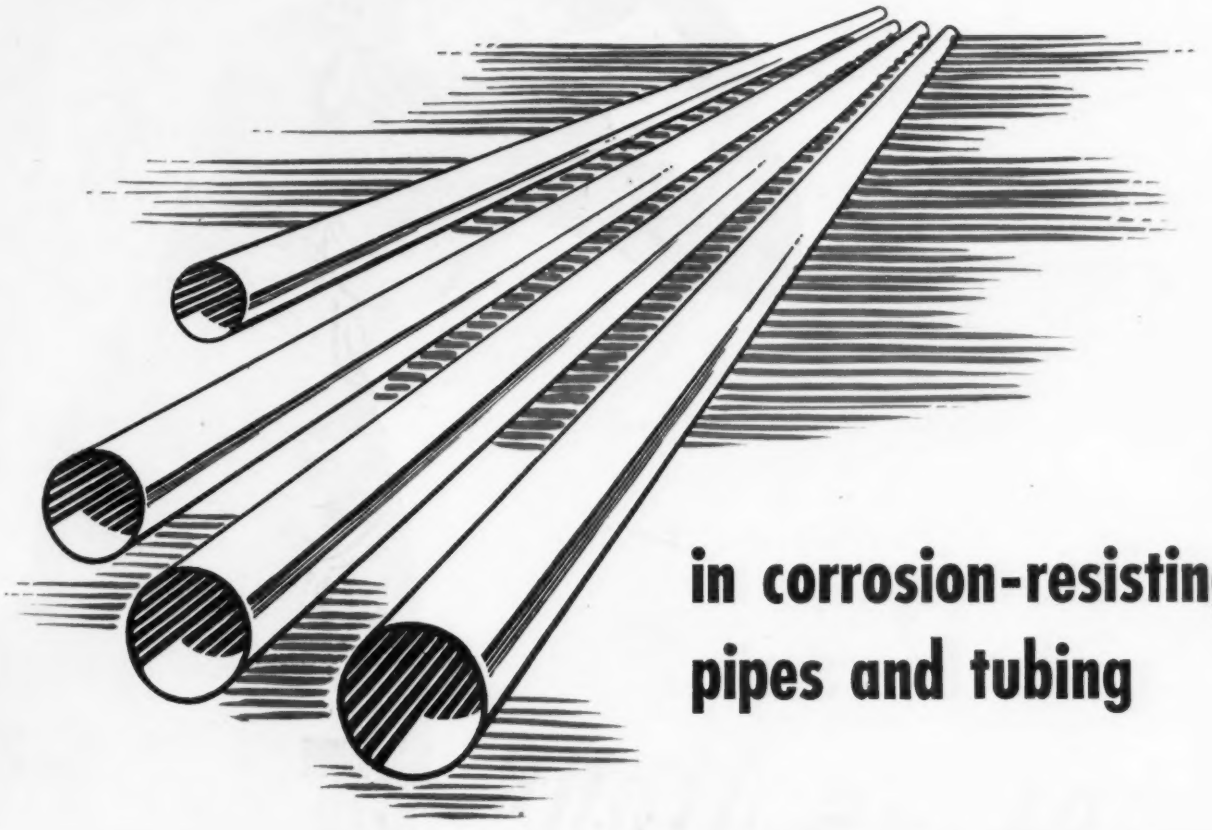
HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Austin **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

How UP-TO-DATE are you on ALUMINUM?

SAFE CONDUCT

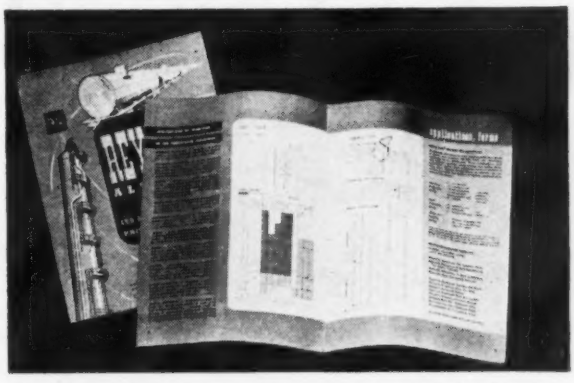


in corrosion-resisting pipes and tubing

MANY FACTORS favor the use of Reynolds Aluminum Alloy Tubing, both in re-constructions and new installations. It is strong, tough, readily worked. And, because of its lightness in weight, erecting costs tend to be lower. Resulting building loads, too, are greatly reduced.

In addition, aluminum is corrosion-resistant, stands up under the attacks of moisture and fumes as well as many types of acids—therefore its use reduces the dangers of staining and marking.

Consider Aluminum . . . Consult Reynolds. Reynolds technicians will gladly work with your engineers. Offices in principal cities. Phone nearest office—or write Reynolds Metals Co., Aluminum Div., 2535 S. Third St., Louisville 1, Ky.



See Reynolds catalog in Sweet's or write for Catalog 102: "Reynolds Aluminum. Its New Importance in Processing Operations." Ask also for Bulletin 17-B on Reynolds Tubing.

Let's finish the job . . . Buy MORE Bonds!

REYNOLDS METALS

REYNOLDS ALUMINUM

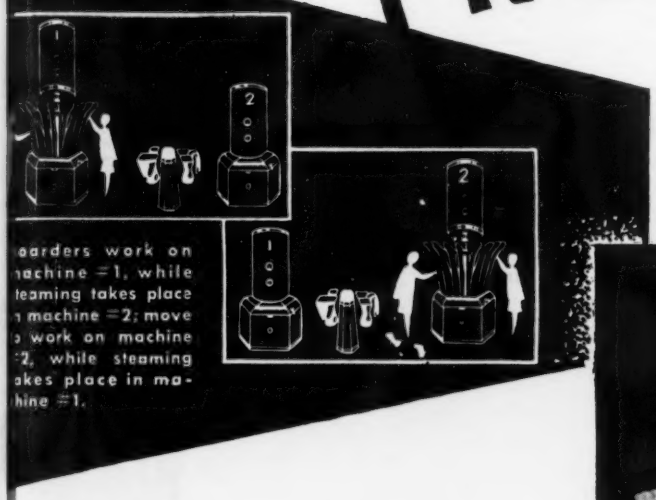
The Great New Source of

INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

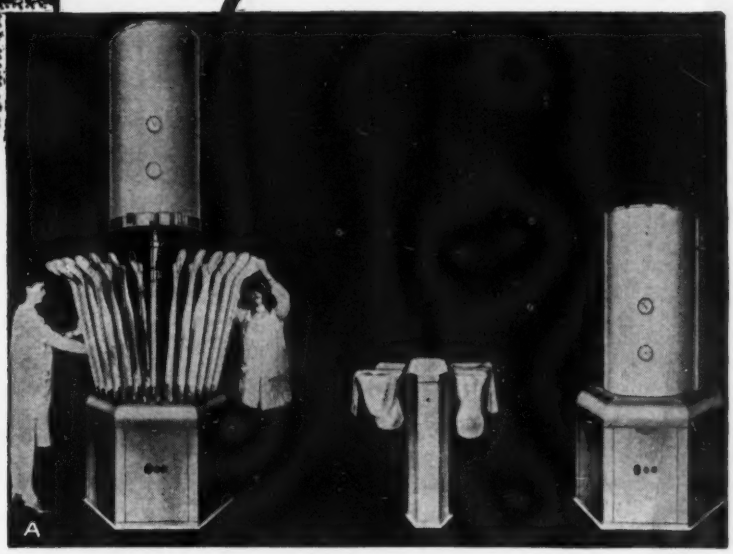
In A Class Alone

PROCTOR & SCHWARTZ · INC ·

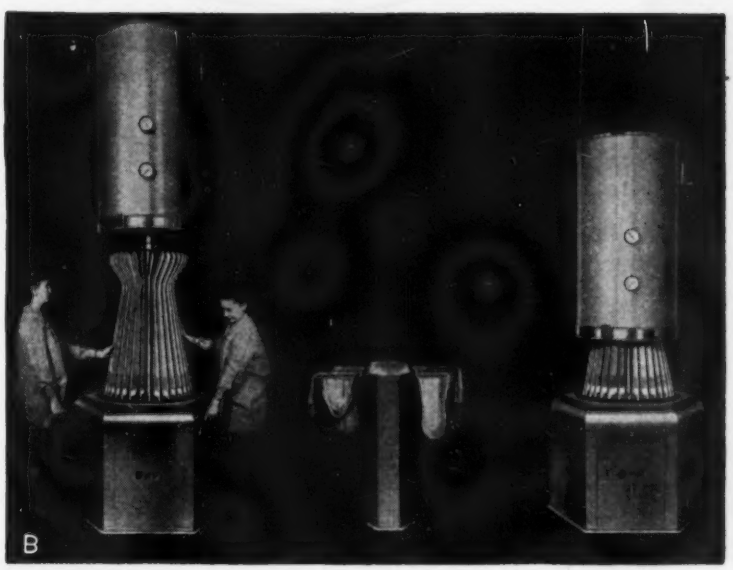
The new PROCTOR *Preboarding* MACHINES



oarders work on
nachine #1, while
teaming takes place
machine #2; move
work on machine
2, while steaming
kes place in ma-
hine #1.



Really in a class alone for modern design and efficient operation, the new Proctor Preboarding Machine for Nylon Hosiery replaces all former machines. Equipped with 30 boards and occupying only about 10 square feet of floor space, it is capable of a high rate of production. Each machine has a capacity of 18 dozen pairs of hosiery per hour. However, the machines are best operated in pairs, by two boarders who work together on one machine and then the other. Thus the production capacity of two boarders on the two machines is 36 dozen pairs per hour. Actual labor requirement is only one boarder for each machine in use. There is no laborious work other than the actual stripping and boarding of the stockings. Unit is shipped assembled, requiring no assembly other than steam and electrical connections. Write today for details.

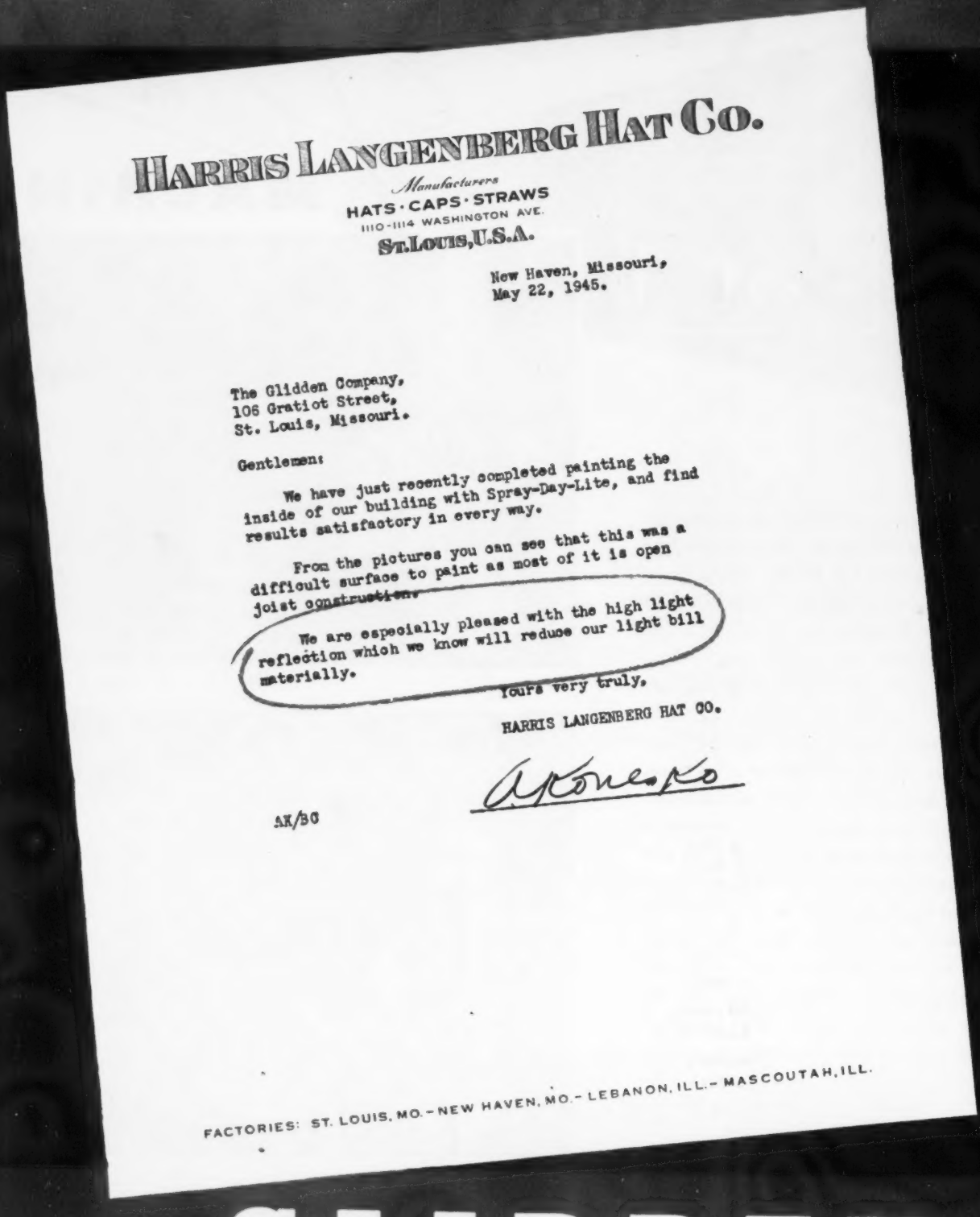


In photo A boarders are beginning to place stockings on boards of machine at left. Stockings have already been placed on boards of machine at right and that machine is closed while steaming takes place. In photo B, boarders have finished the boarding operation on machine at left. Cylinder will be lowered to form steaming chamber. Steaming having been finished in machine at right, the cylinder is automatically rising. As machine at left closes, boarders will move to machine at right, strip finished stockings and replace with others.

FOR NYLON HOSIERY

7th Street and Tabor Road • Philadelphia 20 • Pa •

Hat maker "especially pleased" with high light reflection of . . .



HARRIS LANGENBERG HAT CO.

Manufacturers
HATS · CAPS · STRAWS
1110-1114 WASHINGTON AVE.
ST. LOUIS, U.S.A.

New Haven, Missouri,
May 22, 1945.

The Glidden Company,
106 Gratiot Street,
St. Louis, Missouri.

Gentlemen:

We have just recently completed painting the inside of our building with Spray-Day-Lite, and find results satisfactory in every way.

From the pictures you can see that this was a difficult surface to paint as most of it is open joist construction.

We are especially pleased with the high light reflection which we know will reduce our light bill materially.

Yours very truly,

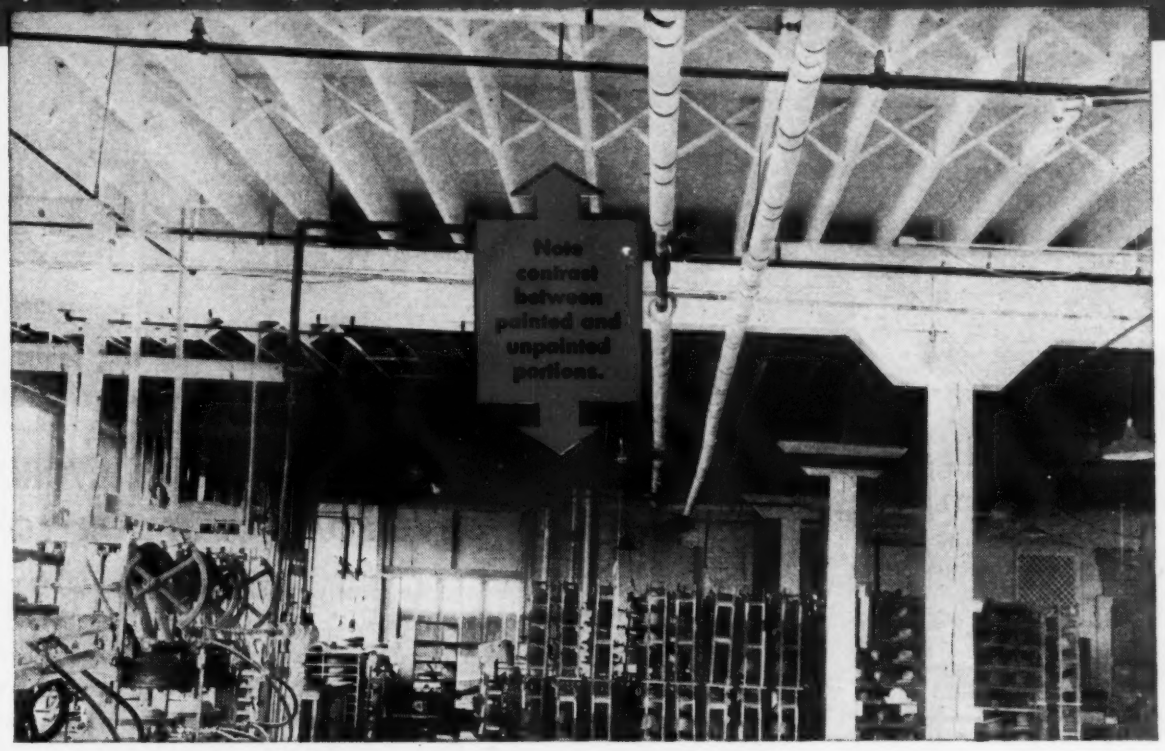
HARRIS LANGENBERG HAT CO.

AK/BC

FACTORIES: ST. LOUIS, MO. - NEW HAVEN, MO. - LEBANON, ILL. - MASCOUTAH, ILL.

GLIDDEN

SPRAY-DAY-LITE



"Paint Illumination" of Glidden maintenance finish cuts light bills, steps up production

The amazing light reflection and diffusion of Glidden SPRAY-DAY-LITE which so impressed the Harris Langenberg Hat Company not only reduces light bills but increases production in plants by improving working conditions. Among the other advantages you will note when you brighten up *your* plant with this great Glidden oil enamel maintenance paint are the following:

1. **One coat equals conventional two-coat results.**
2. **Provides smooth, solid covering over grimy, dirty and badly discolored surfaces of almost any type.**
3. **Its intense white does not yellow with age—also available in 10 beautiful colors.**
4. **Durable, egg-shell finish eliminates eye-straining glare—washes like tile.**
5. **Sprayed or brushed, it does not sag or run; produces little fog or mist when sprayed.**

Send for Color Chart which will help you visualize the many pleasing combinations possible with the 10 beautiful SPRAY-DAY-LITE colors. We will also be glad to assign a Glidden engineer to demonstrate SPRAY-DAY-LITE in your own plant. For one or both, write . . .

THE GLIDDEN COMPANY • Cleveland 2, Ohio

TIME-TESTED

Pacemaker in Paints

E-Z-C COLOR ENGINEERING PUTS COLOR TO WORK

The scientific selection of color for machines, equipment, work-rooms and offices can help ease eyestrain, lessen fatigue, reduce accidents and boost production. E-Z-C Color-Planned Interiors are the result of many years of intensive research in the science of color. Send for free booklet, "Sight Perfection," that shows how to use color strategically in industry.

ANY MILL

NEW YORK
W. S. TAYLOR
52 Vanderbilt Ave.
'Phone — Lexington 2-6060

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ARTHUR HARRIS
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'Phone C-6283; C-6284

STEEL HEDDLES

Straight and Duplex Types (also special) of high carbon steel, nickel or cadmium plated and stainless.

HEDDLE FRAMES

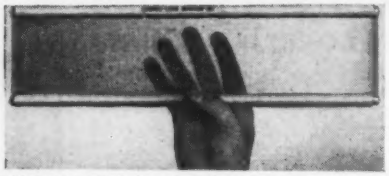
Single iron ends, double iron ends, or combination ends; single or double rods; special frames to order. Metal parts zinc plated.

THE MOST VALUABLE THING IN THE WORLD

LET AN E-MAN SAVE SOME OF IT FOR YOU

The E-Man can save some of "the most valuable thing in the world,"—your time, because he's within easy 'phoning distance, because his practical knowledge enables him to understand your problems and to make suggestions, and because he can supply from *one source* many of the mill accessories that you require. Put an E-Man to work for you. 'Phone or write our nearest office . . . EMMONS LOOM HARNESS CO., Factories in Lawrence, Mass., and Charlotte, N. C. Branch offices as above. EXPORT AGENTS: Storer & Cia., Chacabuco 443-49, Buenos Aires, Argentia; A. Polak, 216, Av. Beira Mar, rooms 403 a-d, Edificio Magnus, Rio De Janeiro and Sao Paulo Brasil; W. L. Robinson, Casilla 4075, Santiago, Chile; C. E. Halaby & Co., Apartado 139, Medellin, Colombia; J. M. Perez Pena, Apartado 1611, Habana, Cuba; Tecnica Textil Lenk, S. A., 20 de Noviembre 82 Local 20, Mexico, D. F. Mexico; Constantino N. Sabal, Apartado 2288, Lima, Peru; N. Marvez, Apartado 391, Caracas, Venezuela; Storer & Cia, Paysandu 1202, Montevideo, Uruguay.

EMMONS WEAVE ROOM ACCESSORIES



REEDS — Pitch-band and all metal types. Air space accurate within .01 inch; dent thickness within .001 inch; super-smooth. Prompt service.

OTHER PRODUCTS

Wardwell Loop & Doll Pickers,—plain, spotted or countersunk,—rawhide face • J-W Picker Aprons & Conveyors • Warper and Lease Reeds • Slasher & Striking Combs • Mail Harness • Selvage Harness • Jacquard Heddles • Mending Eyes & Twine.

"CHAFELESS CORD" COTTON HARNESS — Look for 1 red between 2 green stripes. Glass smooth, flexible, strong. Finest staple cotton; 5 coats carefully baked varnish.

A fast way to get motors...

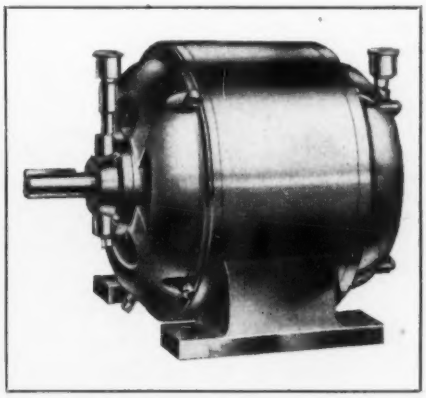
This suggestion is not addressed to buyers who use standard motors, although for them Star also has good news: Star began production of a large range of standard motors for stock weeks ago, and early delivery of some of these can be made.

To makers of products which require a motor that is somewhat "special" in frame design or mounting arrangement, Star's Welded Steel Construction may be a time-saver of great importance *right now*.

Star pioneered this method of construction, and developed unique production welding facilities to save the time and money that went into patterns and castings once required for "special motor" customers.

Exceptional strength and shock resistance is also gained through Star's Welded Steel Construction. This led to extensive use of Star Motors by the Navy long before the war.

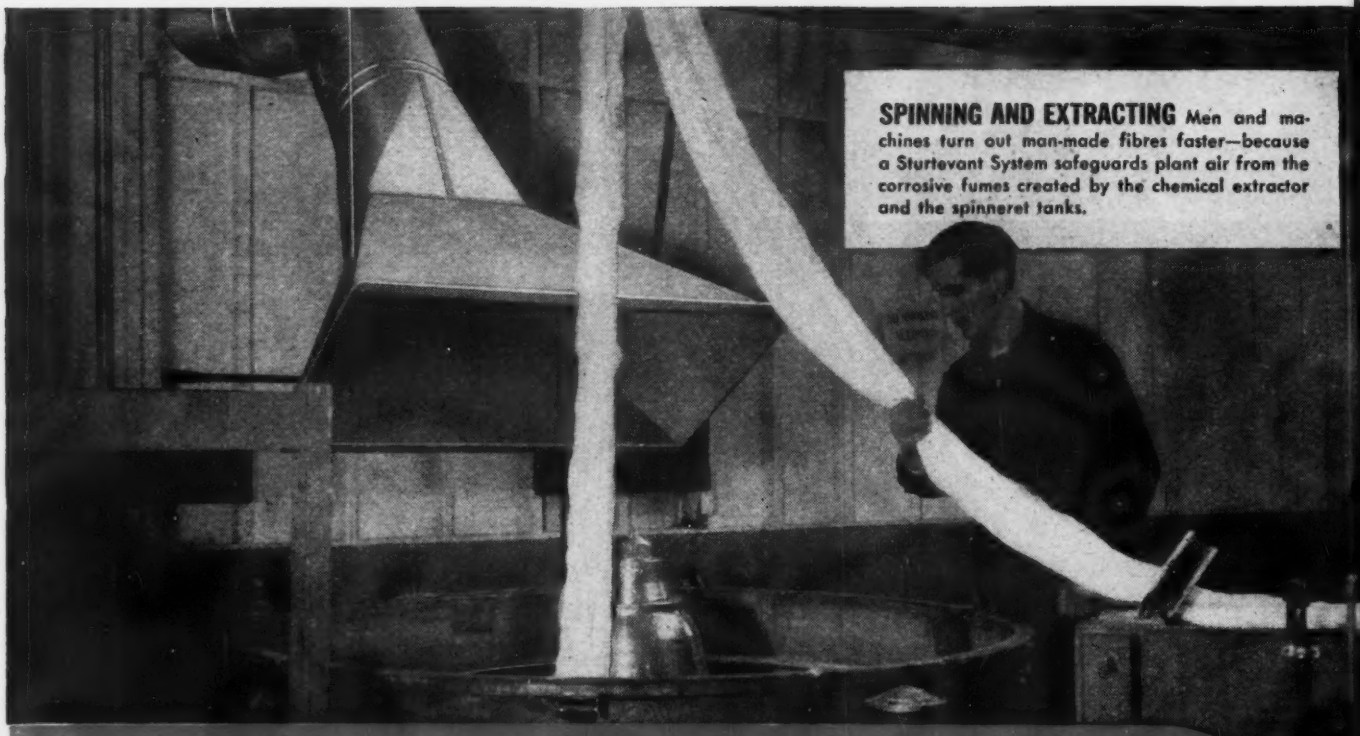
A number of prominent concerns, needing motors that vary from standard, have found that Star can help them to get motors faster than they thought possible. Star may be able to reduce *your* wait for motors. To find out, send a description of your requirements to Star Electric Motor Co., 212 Bloomfield Avenue, Bloomfield, New Jersey.



AC and DC Motors ⅛ to 200 HP;
AC and DC Generators to 150 KW

STAR MOTORS

POWER PACKAGED AS YOU NEED IT



SPINNING AND EXTRACTING Men and machines turn out man-made fibres faster—because a Sturtevant System safeguards plant air from the corrosive fumes created by the chemical extractor and the spinneret tanks.

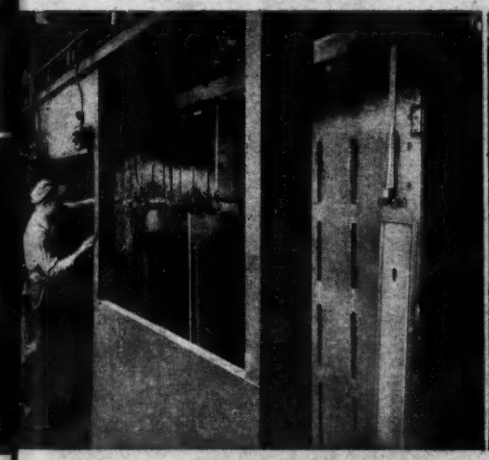
New Profits from Old Processes -when you CLEAR the AIR!

POURING AND SANDBLASTING Time was when foundrymen and many others in the metal industries—had to be good smoke-and-dust eaters. Not so today with Sturtevant Systems on the job—removing the menace that puts machines out of kilter, slows down workers.

BEFORE AND AFTER

PACKAGING AND COOKING Thanks to Sturtevant Systems, food and candy makers call their shots on indoor weather—from receiving floor to packing room—with temperature and humidity made to order for a cleaner, more uniform product, greater output from machines and employees.

DRYING AND DYEING Steam condensing on ceilings or equipment is a hazard with many processes such as dyeing and warp drying. But a soundly engineered Sturtevant System licks the problem—takes a big slice out of power and maintenance costs.



ENAMELLING AND BAKING These operators coat parts with enamel at entrance to Sturtevant Dryer—designed so that plant air is clean and comfortable, and to insure uniform drying of a wide range of shapes and sizes at production-line rates.

MIXING AND GRINDING As with countless processes—so with this Banbury Mixer—Sturtevant came in and banished a production headache. Dust system clears the air, as lampblack and other powdery ingredients are dumped in. Conveying System carries off empty bags cleanly, economically.

VAPOR ABSORPTION

DRYING

PNEUMATIC CONVEYING

AIR CONDITIONING

DUST AND FUME CONTROL

HEATING AND VENTILATING

By eliminating loose dust, smoke, fumes, heat, steam with a Sturtevant air system you can coax greater output from labor and equipment—step up product quality and *keep it there*—often effecting improvements in processing and plant layout. Shown here are a few of the many instances in which Sturtevant equipment and Sturtevant know-how have combined to raise profits, reduce costs and improve quality. Whatever your business or product may be, you can count on Sturtevant to understand your problems.

B. F. STURTEVANT COMPANY
Division of Westinghouse Electric
HYDE PARK, BOSTON 36, MASS.

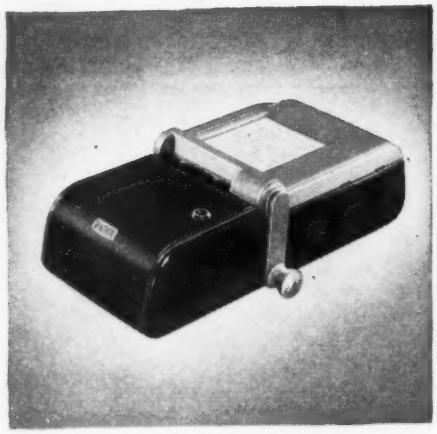
Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

What's Your Price Tag on *Minutes?*

A minute's a small matter, indeed. But price the *minutes* it takes your people to write records, using old-fashioned, inefficient forms. Add these up in every department where records are kept, and chances are they're no longer just minutes—but *hours* of costly, unproductive time!

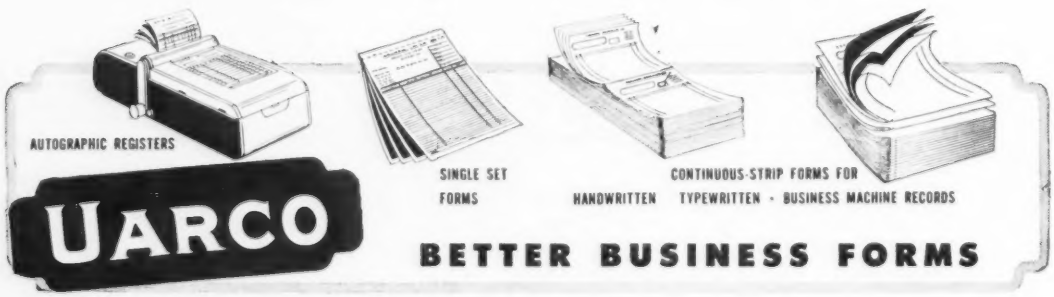
Moreover, this often means customer delays—delays that risk their goodwill. That's why it's important to modernize your record writing methods with prefabricated forms such as Uarco Registers can bring you. Always ready for instant use, they put an end to the gathering of loose sheets . . . inserting of carbons . . . arranging and shuffling . . . slow, laborious taking-apart jobs.

Load a UARCO Register once—and you have forms enough for a full day's use—or more. They provide a firm writing base and feature clean, legible copies made from an ever-fresh carbon roll. And if desired, there are UARCO Registers that automatically file a copy of every record written. Talk to your UARCO representative. See how UARCO Registers can save you time and money. Or write today.



For instance: **The UARCO Accu-Rite Register—valuable for all order form writing—automatically refolds a copy and files it in a protection chamber under lock and key. It steps up the writing of orders . . . provides faster service to customers . . . safeguards records against loss. Ask for further information.**

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*



See the SPLIT-SECOND PRECISION of Bobbin-Transfer on a modern C&K LOOM

These four flash-pictures show part of the process of ejecting an empty bobbin from the shuttle, and substituting a full one.

Actually, this operation is completed so swiftly that it's invisible to any eye—except one like that of the C&K high-speed camera.

For the shuttle . . . flashing back and forth at a speed as high as 34 miles per hour . . . is at rest, fully stopped, in the box *for less than 1/5th of a second.*

Within this time, the bobbins are transferred—a full one of the correct filling yarn is selected and substituted for the empty one.

And this operation must be completed in less than 1/20th of a second, while the shuttle is under the magazine!

Then the new, full bobbin starts on its flight back and forth through the shed.

Among all types of modern machines, few if any others have such a highly co-ordinated system of mechanisms . . . in which timing, positioning, and control are held over long operating periods at such a high degree of precision.

For within inconceivably narrow time-limits, mechanical functions are completed unerringly, unfailingly, through millions of exact repetitions.

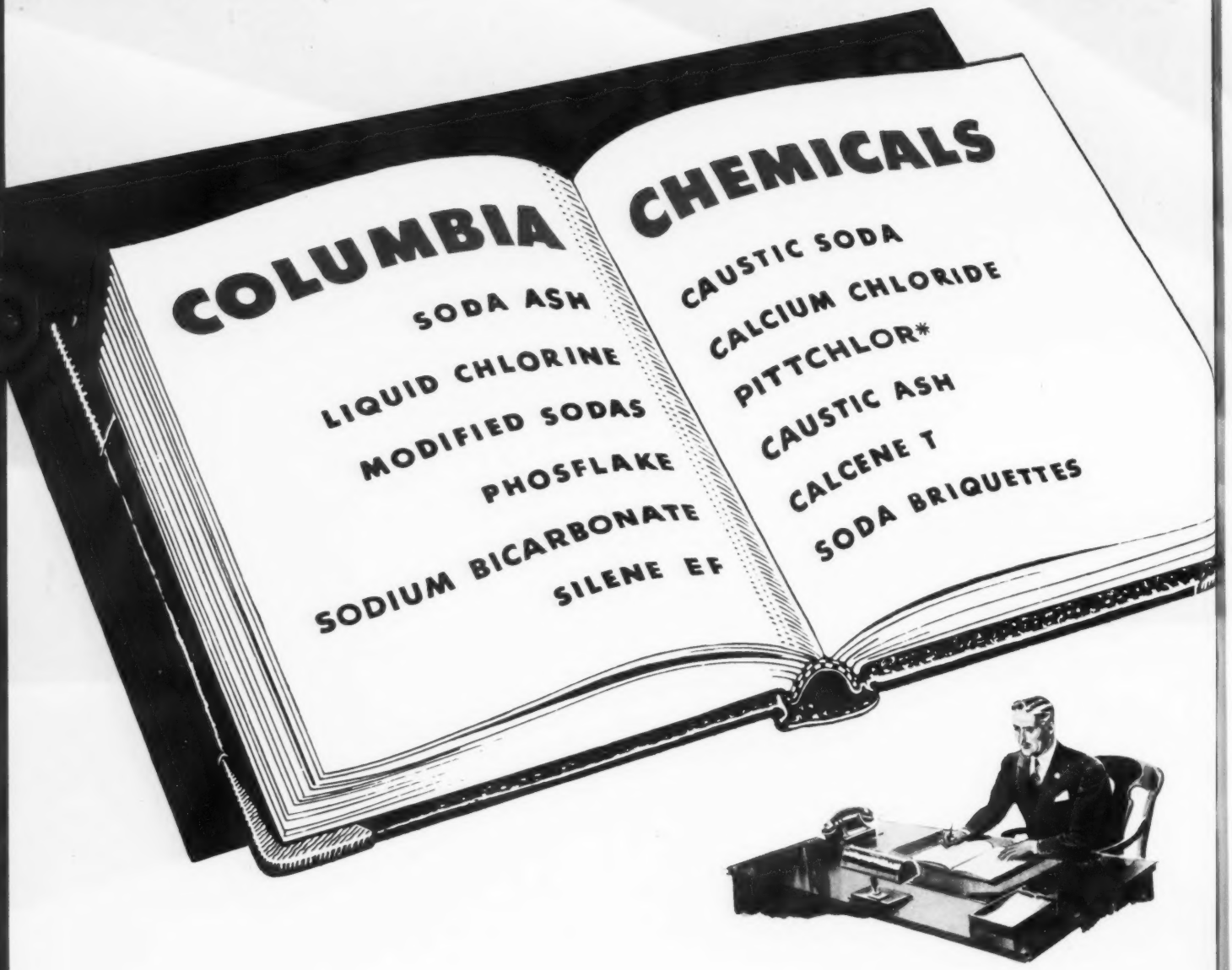
And these time-limits are being constantly studied by the engineers of Crompton and Knowles Loom Works to the end that *your* weavers may be able to roll out fabrics of higher quality, at higher speed, with less effort.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . .
and their New Uses in Tomorrow's Looms

A Good List for Your Book



Columbia's modern production processes are carefully controlled . . . packaging and shipping are efficiently planned and supervised • Columbia plants are favorably located . . . distribution facilities are organized for excellent service • Columbia policies contribute to enduring business relationships.

That's why Columbia alkalies and related chemical products constitute a "good list for your book."

**High Test Calcium Hypochlorite*

COLUMBIA CHEMICALS

COLUMBIA ESSENTIAL

Soda Ash • Caustic Soda • Sodium Bicarbonate • Liquid Chlorine • Silene EF (Hydrated Calcium Silicate) • Calcium Chloride

Getting back into "Civvies"
with a brand-new name

PITTCHLOR

Columbia high-test Calcium Hypochlorite—*now known as* PITTCHLOR—has seen service on every American front . . . is on duty at hundreds of military camps and posts. Requirements of the Army, Navy and Marines for quick, effective sanitation and water purification will be supplied, but PITTCHLOR now is available for civilian uses, in a new suit of "civvies"—an attractive red, white and blue 5-lb. re-sealable can, convenient to use.

PITTCHLOR contains over 70% available chlorine, is stable, non-caking and free-flowing, can be used for quick preparation of disinfectant, germicide, deodorant and bleach solutions . . . for the shrink-resistance treatment of woolens.

Distributed through leading jobbers—also furnished in 3¾-lb. cans and 100-lb. drums.

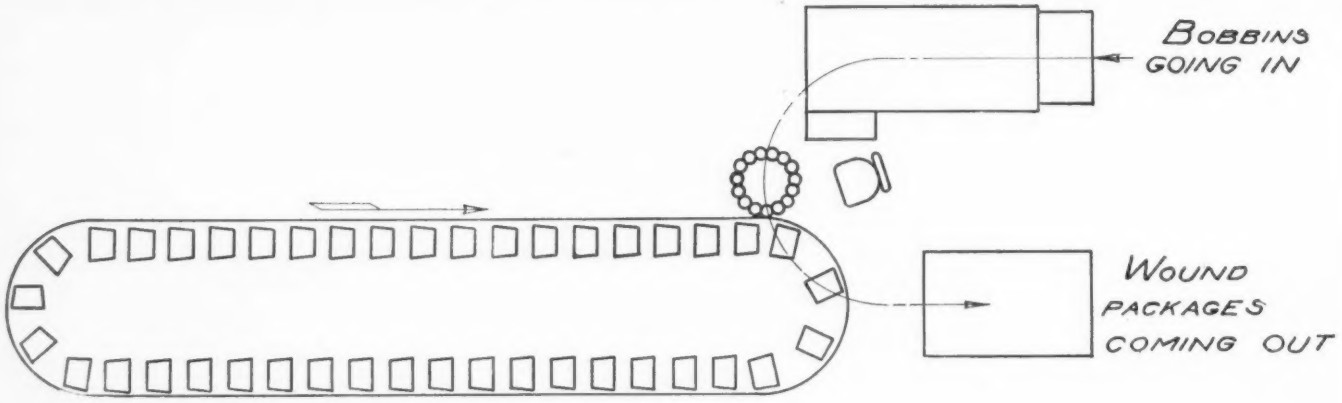
PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING, PITTSBURGH 19, PENNSYLVANIA

Chicago · Boston · St. Louis · Pittsburgh · New York · Cincinnati · Cleveland · Philadelphia · Minneapolis · Charlotte · San Francisco

INDUSTRIAL CHEMICALS

Soda Briquettes · Modified Sodas · Caustic Ash · Phosflake · Calcene T (Precipitated Calcium Carbonate · Pittchlor

ABBOTT AUTOMATIC WINDER



The moving assembly line principle has always been the essential feature of Abbott winders and is not available in other makes.

The operator sits in one position, sets the full bobbins in a rotating magazine in front of her and doffs the full cones or cheeses at the same position.

There is no walking all day, stooping to pick up the bobbins, reaching over to tie them in, pushing trucks around the machine, etc. She works at the end of the winder out of the way of fly and dust. She does not have to strap a knotter to her hand and wiggle her thumb all day to tie knots.

As a result there is very little operator fatigue and yet the production in bobbins tied in per hour will average more than on any other equipment.

Any of the standard 6″ traverse packages can be wound—warping cones, knitting cones, wood or paper tubes.

The bobbins to be wound may be big or small, single or ply, warp, filling or combination wind, wood or paper.

Operators are quickly taught and maintain an even steady production.

The skill of winding is built into the machine.

ABBOTT MACHINE COMPANY

Main Office and Factory: Wilton, New Hampshire

Southern Representative: Mr. L. S. Ligon, Greenville, S. C.

HOW YOU CAN GUARANTEE

"First Day" Crispness

FOR THE LIFE OF YOUR GLAZED CHINTZ

Nothing seems to phase this new kind of chintz, glazed with Resloom* NC-50, Monsanto's new melamine finish that actually fuses itself to the fabric.

It is chemically resistant to water and all the ordinary solvents, acids and alkalis. The transparent luster of the Resloom glaze doesn't yellow or dull . . . the initial crispness lasts for the life of the fabric.

Resloom NC-50 (not to be confused with Resloom M-75 for shrinkage control) is supplied as an unpolymerized resin in water solution. It is applied by standard equipment and polymerized at temperatures up to 400° F., which fuses the resin to the fabric. Resloom NC-50 can be used with a number of different formulas to meet varying requirements.

If you see opportunities in being able to offer genuinely durable glazed chintz for smart dress goods, uniforms, drapes, upholstery, notions and novelties . . . we suggest you look into Resloom NC-50 at once.

Complete Information Available

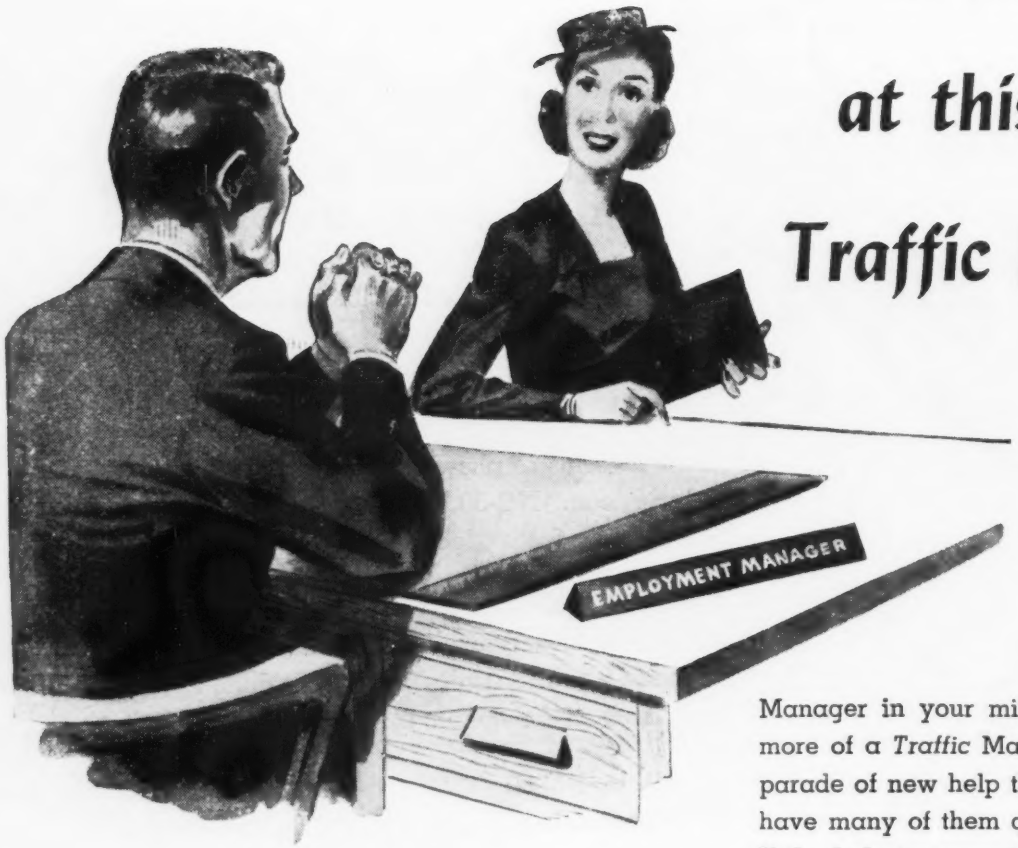
Resloom NC-50 is available now in commercial quantities. And technical information and assistance for getting Resloom NC-50 adapted to your operations are yours for the asking. Write, wire or phone: MONSANTO CHEMICAL COMPANY, Textile Technical Service, Everett Station, Boston 49, Massachusetts.

Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING ∧ INDUSTRY . . . WHICH SERVES MANKIND

Is the Man at this desk a Traffic Manager?



Does the Employment Manager in your mill sometimes think he is more of a *Traffic* Manager? Does he usher a parade of new help through his office, only to have many of them quit a week or two later? If the help turnover is especially high in your spinning and twisting department, there's a man who can help you keep it down.* He's never checked an I. Q. or given an aptitude test in his life, but he's a genius for making friends for you at the frames – and keeping the kind of help you want on the job.

*THE VICTOR SERVICE ENGINEER is the man who can help you keep good hands – by taking the grief out of the job. The result of his efforts in smoother spinning and twisting not only pleases the help – it also pleases the *customers* – who want top quality, and who won't pay more to cover costs forced up by inefficiency.

RIGHT NOW, in the face of increasing competition for peacetime markets, you need this resourceful cooperation – the friendly, result-getting Victor service that has made Victor travelers standard for over 8,000,000 spindles of spinning and twisting.

NEW FIBERS, NEW BLENDS that increase your problems are seldom new to the Victor Service Engineer. You'll find him ready to share his important information on any fiber. Write, wire, or phone the nearest Victor office . . . for *prompt* service.

Victor Ring Traveler Company

PROVIDENCE, R. I. — 20 Mathewson St. — Tel. Dexter 0737

GASTONIA, N. C. — 173 W. Franklin Ave. — Tel. 247

Keep a Step *ahead with*

VICTOR Ring Travelers

BEHIND EVERY SQUARE D STARTER

MAGNET coils, contacts or overload relays can be changed in no time at all—and without disturbing external connections. Square D is designed for simplicity.

PLENTY of wiring space and easy-to-get-at terminals. Installation and inspection is faster and easier. Square D is designed for accessibility.

YOU can be sure that any starter from Square D's unusually complete line will do its job consistently and with minimum maintenance. Their performance in thousands of plants proves that Square D starters are built to "take it."

Write for Bulletin 8536

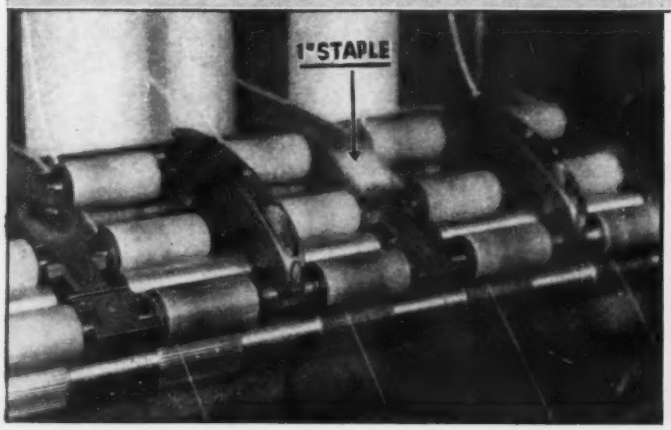
Square D Company, Industrial Controller Division,
4041 North Richards St., Milwaukee 12, Wis.

SQUARE D COMPANY

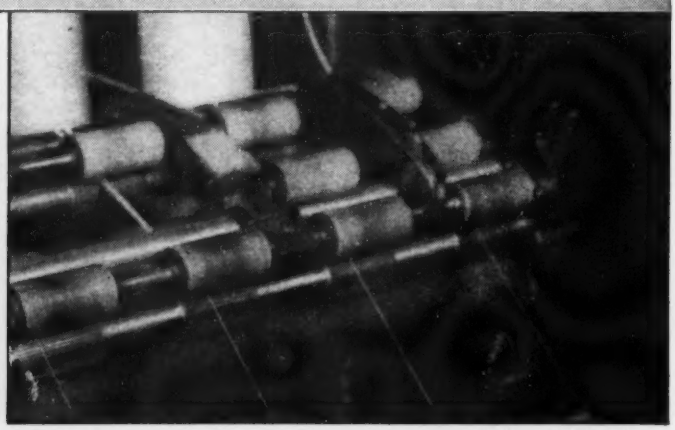
DETROIT • MILWAUKEE • LOS ANGELES

CHANGING FROM COTTON TO SYNTHETIC STAPLE FIBRES

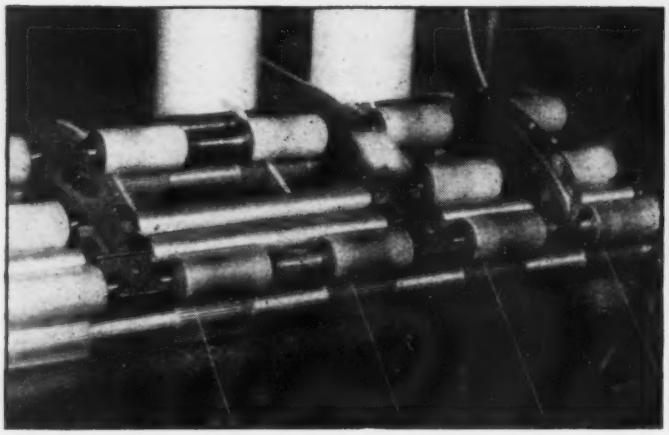
It's as Simple as A-B-C *with the* H&B 4-ROLL LONG DRAFT SPINNING SYSTEM



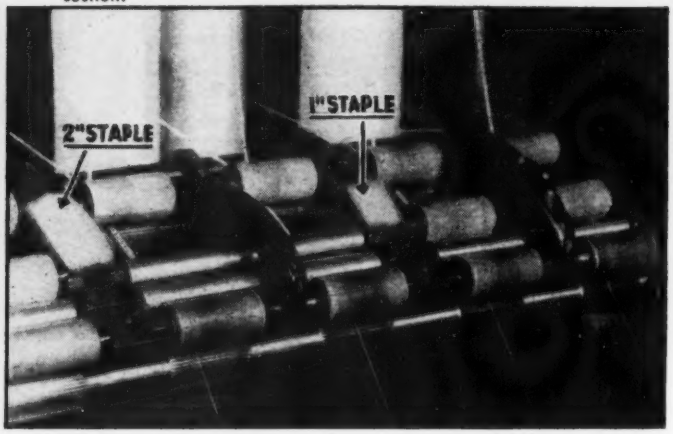
Spinning 1" staple cotton. Note new streamlined saddle.



A Saddle and third top roll have been removed from left-hand section.



B A light weight third top roll has been inserted and the cotton-roving removed.



C Jump saddle in place of standard saddle and rayon roving in creel. Frame can now run 1" cotton and 2" rayon at the same time.

Yes, that's all you have to do to change from cotton to synthetic staples with the H & B 4-Roll long draft system. No change in setting, nor belts, are necessary and the system will accommodate staples up to 3". All mechanical changes required are easily made during the time necessary for creeling.

The changeover is greatly facilitated by the new H & B Patented Weighting Assembly (including new streamlined saddle), which is interlocking and may be lifted up as one unit. A complete description of this assembly will be furnished on request.

The H & B 4-Roll Long Draft Spinning System can be installed on any existing frame of standard make. It is not only extremely flexible, but also unusually easy to operate and to maintain. No belts to change, to replace, or to keep clean.

Let us make recommendations.

H & B AMERICAN MACHINE COMPANY

PLANT AT PAWTUCKET, RHODE ISLAND

Boston Office, 161 Devonshire St.; Charlotte Office, 1201-3 Johnston Bldg.; Atlanta Office, 815 Citizens & Southern National Bank Bldg.

RELIANCE Series C MOTORS

End Your Lubrication Worries!

Say good-bye to bearing worries! Regardless of whether you over-grease or under-grease, Reliance's ball bearing design guarantees longer motor life.

Assured lubrication—without the care you must exercise with conventional motors—is a time-saving, money-saving reason for preferring Reliance Motors. Write today for Instruction Sheet 3042, which explains why the Reliance design needs no lubrication care.

RELIANCE ELECTRIC & ENGINEERING CO.

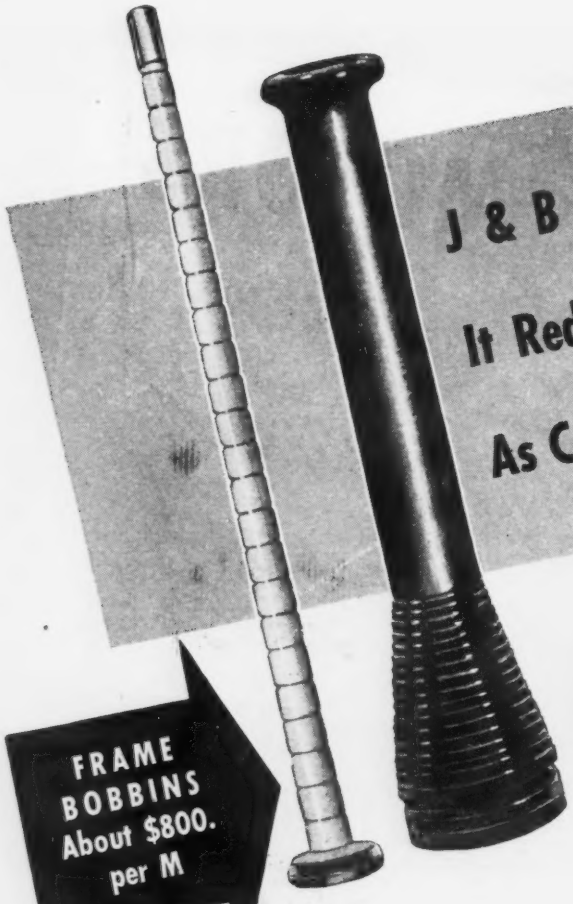
1086 Ivanhoe Road Cleveland 10, Ohio

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville • Houston • Kalamazoo
Knoxville • Los Angeles • Minneapolis • New Orleans • New York • Philadelphia • Pittsburgh
Portland, Ore. • Rockford, Ill. • St. Louis • San Francisco • Seattle • Syracuse • Washington, D. C.

8 Balanced Design Features

1. **Protecting enclosures** keep out dirt, chips, oil, excess moisture.
2. **Steel stators for strength.**
3. **Thirteen-step winding treatment,** for maximum stator protection.
4. **Pressure cast aluminum rotors** provide trouble-free windings.
5. **Heavy shafts,** liberally designed for added strength.
6. **Improved bearing lubrication** affords *real* protection to bearings and windings.
7. **Optional lead outlet arrangement** permits machine mounting with elimination of conduit box.
8. **Flange and face type brackets** offer alternative methods of machine application.

RELIANCE A·C D·C MOTORS



J & B GIANT PACKAGE MULE

It Reduces Bobbin Cost About 80%

As Compared with Ring Spinning Frame

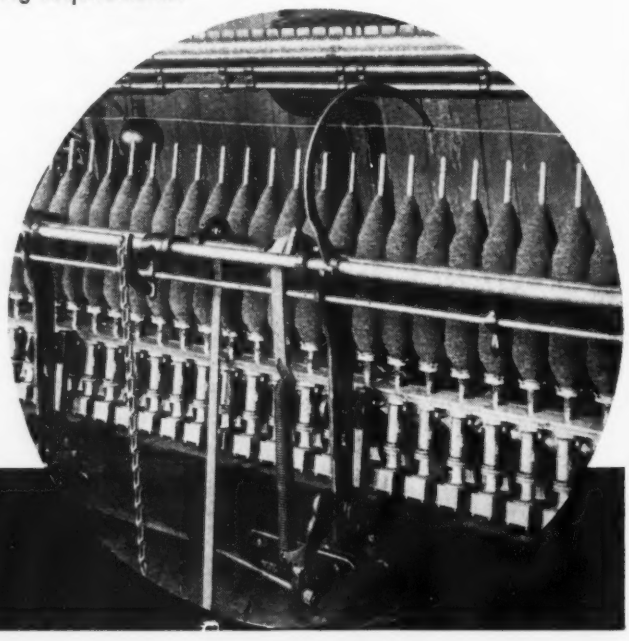
FRAME BOBBINS About $800. per M

GIANT PACKAGE MULE BOBBINS $144.25 Per M in 10M lots

MADE of tough laminated paper, impregnated for water repellency, hardened by baking and formed with deep, well rounded corrugations, GIANT PACKAGE mule bobbins have, in addition to long life, the following advantages: perfect balance, smooth but controlled delivery, great resistance to distortion from temperature and humidity changes and comparative freedom from splinters, chipping and splitting. Yet they cost about 80% less than ring spinning bobbins. Important though it is, bobbin cost is only one of many items to consider when installing wool spinning equipment. Therefore, note these other GIANT PACKAGE mule features, most of which also apply to J & B Small Package Modernized Mules.

1. The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning.
2. It permits inspection of the thread.
3. It will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%.
4. It will successfully spin short staple roving which will not hold together on a frame.
5. It requires less horse power than a frame.
6. It requires less floor space per lb. of yarn produced than does ring spinning.
7. The cost of the yarn produced is at least ½ that of yarn produced on a frame.
8. Its initial cost is several times less than that of frames with equal production.
9. Its cost of upkeep is exceptionally low.
10. The J & B filling package does not require rewinding for an automatic loom.
11. Changes for spinning different types of yarn on the J & B Mule are easily and quickly made.

Let us recommend an installation for your wool spinning requirements.



JOHNSON & BASSETT, INC.

WORCESTER, MASSACHUSETTS, U. S. A.

DIRT COSTS MORE THAN PRECIPITRON

TESTS PROVE EFFICIENCY

The Blackness Test was developed to furnish a more precise measurement of Precipitron's greater efficiency compared to mechanical filters. It provides greater accuracy and approximates actual particle count.

The results of a typical test, shown here, indicate clearly what Precipitron can do. Here are actual photographs of a test . . . where 2,500 cubic feet of air in each instance, was drawn through a cloth area for a 60 minute period. They tell a graphic story.

Uncleaned Air

Mechanically Cleaned Air

Precipitron Cleaned Air

Dirt exacts a heavy toll in the textile industry. It retards production, causes rejects, frustrates employees and counteracts economies that might represent the difference between profit and loss.

Precipitron*, the best answer science has been able to devise, is an electronic air cleaner which virtually eliminates dirt. It delivers air 90% clean—by actual blackness or discoloration test. Smoke, dust, soot, fumes and mist are removed . . . down to particles as small as 1/250,000 of an inch. Guides, guide wires, flyer wires and rollers remain free of oily dirt deposits. Blackened yarn and streaky packages are reduced to the minimum.

In one large southern mill, Precipitron was directly responsible for a reduction in dark shades from 14.7% down to 3.9% of winter production!

Precipitron will help you attain the new standards of dark shade guarantees that normal competition will force lower and lower . . . it will provide an impelling attraction for factors seeking top quality.

For the complete story on this important Westinghouse development, call our nearest office, or write Westinghouse, P. O. Box 868, Pittsburgh 30, Pa.

Westinghouse PRECIPITRON

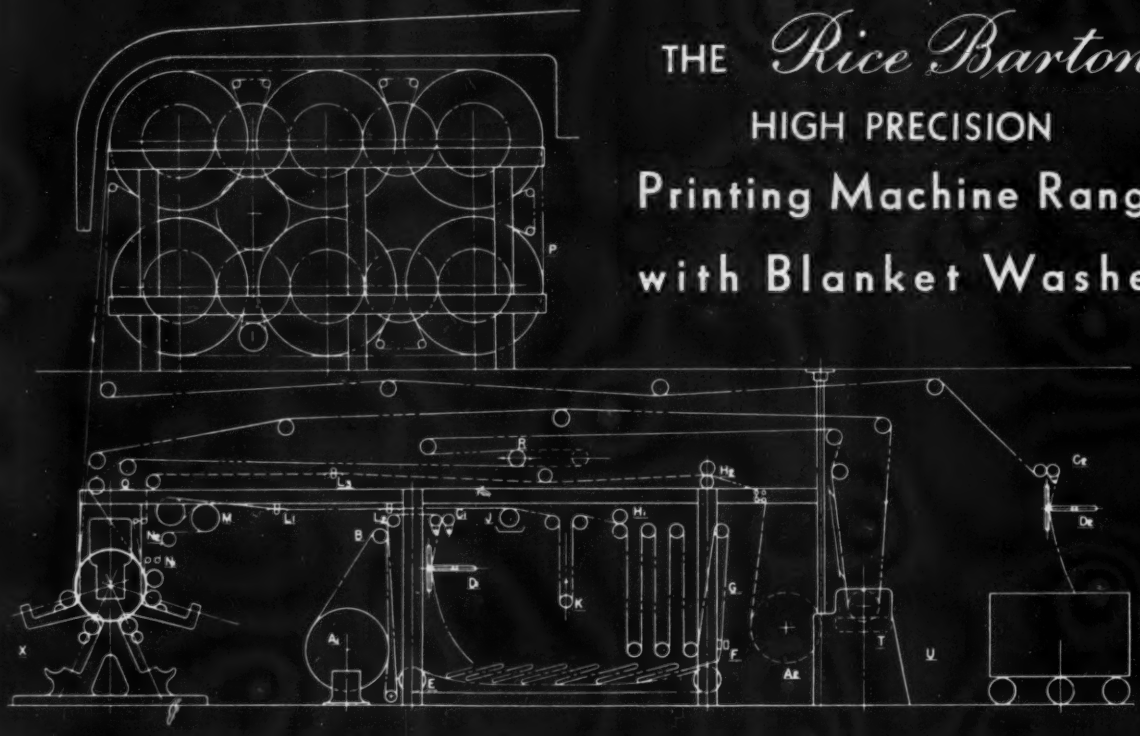
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

*Trademark registered in U. S. A.

J-04514

4 reasons for investigating

THE *Rice Barton*
HIGH PRECISION
Printing Machine Range
with Blanket Washer



❶ Increased Speed

Precision construction, mandrels equipped with anti-friction bearings and other engineering refinements have resulted in speeds 3 to 4 times those of older machines. Even higher speeds may be attained with special conveyors which keep the machine in non-stop operation.

❷ Reduced Production Costs

Faster operation, lower percentage of seconds and reduced power requirements combine to produce the most yardage per hour at the lowest cost per yard.

❸ Better Printing

This complete printing range feeds the goods under controlled tension . . . accurately tracks the material and produces uniform selvages. The machine is built to print 4, 6, 8, 10, 12 and 14 colors with substantially reduced printing pressures.

❹ Lower Installed Cost

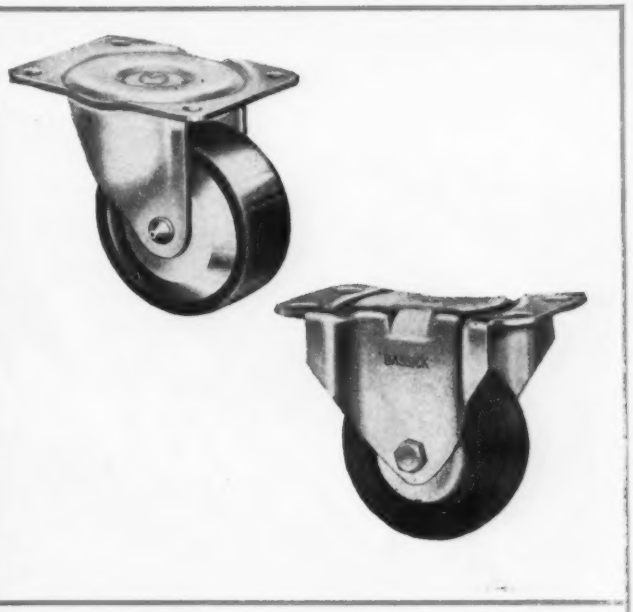
With the new blanket washer many types of fabrics may be printed without a backgrey cloth. Eliminated also is the need of backgrey dryers and handling equipment.

Send for Bulletin No. 451

Rice Barton Corporation
WORCESTER • MASSACHUSETTS

SPECIFY BASSICK

. . . To Forget Your Caster Troubles



Many of the leading manufacturers of materials-handling equipment for textile mills standardize on Bassick Casters because of the trouble-free,long life engineered into their design.

Bassick engineering includes the small but important "extras" that insure greater protection for your materials and equipment. The very size of a caster in proportion to the job expected of it justifies your serious consideration of the details of its design.

The stationary and swivel casters shown are SERIES "38" and "61". They are furnished standard with the Bassick spanner bushing construction that strengthens the horn and prevents bending or binding against the hub of the wheel. The heavy gauge steel frames are scientifically designed and structurally embossed to take the greatest abuse and shocks without distortion.

Available with the highest quality composition wheels to protect floors. All can be furnished with wheel thread guards.

Bassick offers the world's most complete line of casters. On new equipment or replacements, be sure you specify Bassick.

THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corporation. *Canadian Division:* Stewart-Warner-Alemite Corporation, Limited, Belleville, Ontario.

Making more kinds of Casters... Making Casters do more

Bassick

FOR A WIDE SPEED RANGE ON A-C OR D-C

Where a broad range of speeds is required, a G-E adjustable-voltage range-drive is recommended. In this type of drive, a d-c generator supplies power to the range motors, the generator being driven at constant speed by an a-c or d-c motor. The operating speed of the entire range is controlled by adjustment of a single rheostat. Minor adjustments of speed or of tension between elements to compensate for changes in the length of the goods in process are made by either gate rheostats or by manually operated vernier rheostats.

This type of range-drive provides for a wide adjustment of speed, 8:1 being in common use, while 20:1 can readily be provided. The master control station contains start, jog, and stop buttons as well as the master rheostat.

. . . when you switch from batch to continuous with a G-E RANGE-DRIVE

If you are using the batch method of finishing, you may find that man-hours are being wasted in excessive handling—production rates are comparatively low—valuable floor space is being lost. Result? Finishing costs may be out of line!

The sure-fire way to bring these costs down *fast* is to put your process on a continuous basis with a G-E range-drive. You'll find that many handling operations are eliminated—that over-all production rates are higher. You'll save man-hours, too, because one operator can control an entire group of machines from *one* central location. The compactness of a unified range enables you to plan production areas more efficiently and to improve working conditions in your plant.

General Electric builds *four* basic types of range-drive. We will give you an impartial recommendation as to the drive which best fits *your* specific requirements. Moreover, you will get a completely co-ordinated range-drive in which *every* component is built—and backed—by *one* reliable manufacturer. Whether you want to install a complete new range-drive, or revamp or extend an existing one, a G-E application engineer will be glad to plan a drive that will help you get *all* the benefits of continuous processing. Just call the G-E office near you. *General Electric Company, Schenectady 5, N. Y.*

PROCESSING SYNTHETICS?
G.E. has methods for maintaining zero-pounds tension. Ask us about them.

FOR A SMALL SPEED RANGE ON D-C

Where the power supply is d-c and only a small speed range (to 4:1) is required, a constant-voltage range-drive may be the best. This drive is characterized by its simplicity. No auxiliary apparatus is needed. You simply use adjustable speed d-c motors. In this G-E drive, any section of the range can be stopped or operated independently. One of the biggest advantages of this type of drive is the ease with which you can make additions to the range.

FOR A SMALL SPEED RANGE ON A-C

If you have a-c, and if a small speed range (2:1 or 3:1) will meet your requirements, brush-shifting Type BTA a-c motors can be used to drive individual range units. In this G-E range-drive also, any unit can be stopped or operated independently. There is no limit to the number of units you can have in the range, and it is not necessary to revise the original range when making additions.

IF YOU USE PROCESSING STEAM

Then you should seriously consider the G-E turbine-electric range-drive. Here a steam turbine drives an a-c generator and the lead unit in the range. This generator furnishes variable-voltage, variable-frequency power for squirrel-cage motors which drive the follower units. In space requirements, appearance, cleanliness, and ease of operation, this G-E turbine-electric drive is comparable to a motor unit. A wide range of speeds is available, and regulation at all speeds is extremely close. Low-pressure steam from the turbine can be used for processing.

Buy all the BONDS you can— *and keep all you buy*

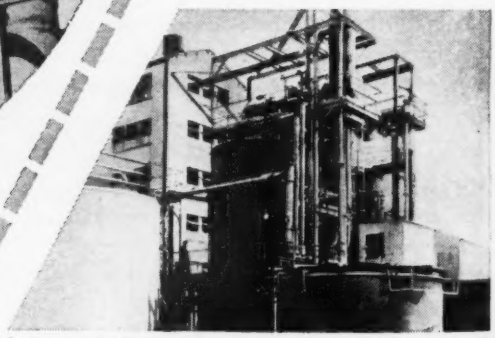
DRIVE SYSTEMS FOR TEXTILE MILLS

GENERAL ELECTRIC

661-22-8852

Make Acid Toe The Line

This precipitator for the abatement of industrial fumes near residential areas was installed by Derkiss Lead Burning Contractors, Linden, N. J. Chemical lead sheets, burned together and supported on skeleton steel frames, form the tanks. Total lead used, 41,000 pounds.



Even complete acid-recovery plants are designed and built by National Lead. These feature the patented Simonson-Mantius Process with its advantages of low temperature and high yield.

From Plant to Equipment to Pipe

Whatever you need in lead—*Go National.*

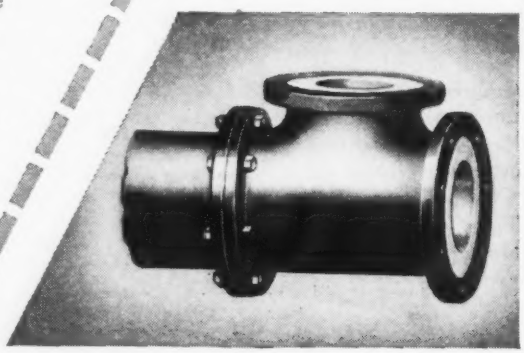
Do you need lead sheet, pipe, coils, valves, flanges, traps, bends? *Go National for Lead.*

Do you need chemical, antimonial, tellurium, or tellurium-antimonial lead? For example, do you need Tellurium Lead's corrosion resistance at elevated temperatures and its ability to withstand vibratory stress? *Go National for Lead.*

Do you need lead-lined or lead-covered acid valves, pipe, coils, or special lead-lined apparatus fabricated to specification? *Go National for Lead.*

Or do you require a complete sulfuric acid recovery plant, with everything supplied, from the plan right down to the last detail of construction? *Go National for Lead.*

Most important of all, do you need the years of experience which National Lead has accumulated from thousands of lead installations in every field handling corrosive solutions and gases? *Go National for Lead.*



Where high steam pressure, vacuum, vibration, shock and rapid temperature change are encountered, as in evaporators, autoclaves, pressure stills, heating and cooling coils and agitators—look into our homogenous lead-lined or lead-covered equipment.

When high pressures plus corrosion must be licked, investigate National Lead's lead-lined pipe and fittings. Made of steel or iron, the pipe is lined with seamless chemical lead tube, bonded by our special "Tubond" process.

Go "National" for Lead

National Lead Company

111 Broadway, New York 6, N. Y. *Offices and Plants in Principal Cities and Canada*

THE FROZEN BEARINGS THAT "*Burned Up*" THE BOSS

▶ **THE SCENE:** The busy mill of Barbour Welting Company, Brockton, Mass., leading manufacturer of leather welting and textiles.

▶ **THE PLOT:** The machines are clicking off thousands of yards of welting and woolen materials per day. Suddenly, a machine comes to a clattering, smoking stop. A bearing has "frozen" stiff, and will the Boss be "burned up!"

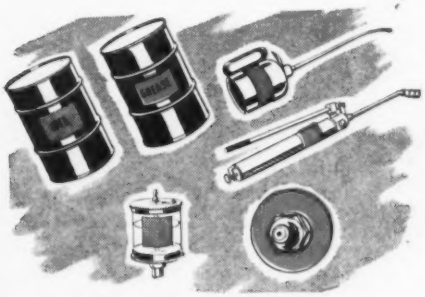
And why not? Scarcely a week went by without a breakdown of some piece of machinery due to bearing failure. And there are hundreds of machines literally covered with bearings that *demand positive lubrication.* Many of these points were being neglected—overlooked by inexperienced help who did not know where to find them. Some bearings were getting the wrong lubricant. Others were getting too much.

Oil and grease from overlubrication was ruining material in process of manufacture and cutting down volume. Production schedules were dislocated due to machine "down-time" while bearings were being replaced.

▶ **THE HAPPY ENDING:** Alemite Lubrication Specialists analyzed the Barbour Mills and recommended the Alemite Coloroute Plan of Lubrication. Now every point—every lubrication fitting, gear and oil hole is identified by color symbols that fairly shout at the oiler, "Hey! Don't forget me." Since the installation of Coloroute a year ago, there has not been one bearing failure—*not one machine out of production*—due to the failure of a lubricated part. Lubricating time has been cut over 50%.

* * *

There's no guesswork with Coloroute. First, the Alemite Lubrication Specialist analyzes your machines, lubricant requirements and lubricating equipment. Out of this complete analysis comes his recommendations for the minimum number of lubricants necessary to do an efficient job. (This often results in reductions of 30% to 75% in the number of lubricants required.) Then, each container and gun is "color-identified" to correspond to the color symbols on the machines. The color of the symbol tells which "grease or oil"—the shape of the symbol tells "how often." The complete plan is "super-safe" and can be quickly taught to inexperienced help.



To Executives: Have an Alemite Lubrication Specialist Explain the "Coloroute Plan of Lubrication."

No plant is too large or too small to enjoy the economies and benefits of Coloroute. Talk it over with an Alemite Lubrication Specialist. He will give you complete details on Coloroute, without the slightest obligation. Drop us a line—Alemite, 1888 Diversey Parkway, Chicago 14, Ill. In Canada: Belleville, Ontario.

ALEMITE

First in Modern Lubrication

Another Product of STEWART WARNER

CONSULTATION • EQUIPMENT
LUBRICANTS • ENGINEERING
MAINTENANCE

Ask your Maintenance man

about *High Safety Factor* Electrical Insulation

Trouble-shooting maintenance men, whose primary jobs are to prevent shutdowns and to see that repairs make equipment as good as *or better* than new, will tell you that Fiberglas* Electrical Insulation Materials are the answer to many of their problems.

This better insulation material provides "extra" protection against the conditions which cause most motor burnouts. Impregnated Fiberglas has exceptional temperature, moisture and insulation resistance; high tensile, dielectric and impact strength; and an especially favorable space factor.

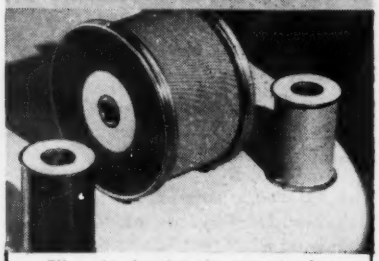
More and more design engineers, as well as maintenanee men, are standardizing on Fiberglas-base Materials. They provide high *Safety Factor* insulation for electrical equipment which may be subjected to such hazards as heat, dirt, moisture, corrosive acids, overloads and careless handling or operation. These are the conditions which frequently cannot be anticipated by the manufacturer, yet are among the chief causes of heavy time-and-dollar loss in nearly every industry.

APPLICATION DATA

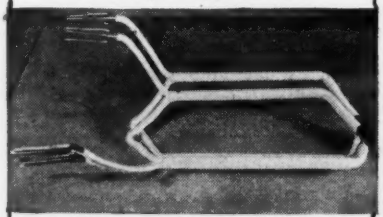
There is a Fiberglas-base Material to meet virtually every requirement. Performance and application data, as well as facts about the various types of Fiberglas Electrical Insulation Materials are included in catalog EL 44-7. Write for your copy today and ask for the name of the supplier located nearest to you. *Owens-Corning Fiberglas Corporation, 1864 Nicholas Building, Toledo 1, Ohio.*

In Canada, Fiberglas Canada Ltd., Oshawa, Ont.

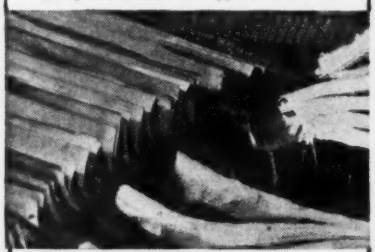
There is a FIBERGLAS Insulation Material for every need



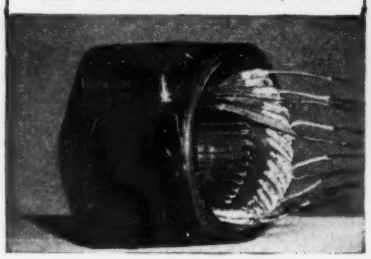
Fiberglas-insulated magnet wire in sizes from heavy # 0000 to fine # 42, and Fiberglas-insulated lead wires, both meet a wide variety of applications.



Treated or untreated Fiberglas Tape is used to insulate practically all sizes and types of coils.



Varnished Fiberglas Cloth is used for slot and phase insulation, high dielectric and high temperature coil form insulations, etc.



Fiberglas Treated Sleeving can be cut to short lengths without fraying. Single Saturated is also widely used on pigtail brush leads, leads on small armatures, single transformers, etc.

Write for catalog EL 44-7, today.

ASK FOR FIBERGLAS...IN YOUR NEXT NEW MOTORS...AND ON YOUR NEXT REWIND

FIBERGLAS

*T. M. Reg. U. S. Pat. Off.

ELECTRICAL INSULATION MATERIALS

Houghton labs are ready for this new textile age

Above is a section of the Houghton Research Laboratories where organic research leading to development of textile processing products has been carried on throughout the war. With Victory and the release of scarce basic materials, this research now enters its final phases.

Soon the textile industry will be offered new finishes, softeners, permanent water repellents, synthetic detergents and surface active agents—all will be far superior to pre-war products. For advance data, write E. F. HOUGHTON & CO., Philadelphia or Charlotte.

Houghton's war-born products for the peacetime job

When the Atomic Bomb hit Taylor's...

THE Atomic Bomb landed on American industry long before it devastated Hiroshima and Nagasaki. Maybe it hit you harder than it hit us. All we know is that here at Taylor Instrument, it had an impact not only on our own organization, but on our suppliers and our customers. Here is what happened:

On a spring day in 1943, the War Department called us in to ask us if we would assume the responsibilities of prime contractor on process control instrumentation for the Kellex Corporation for a secret project called the "Manhattan District." As everybody knows now, this was the Oak Ridge Atomic Bomb Project.

We were already supplying instruments to eleven major branches of the armed forces. Commitments to the super-critical synthetic rubber, 100-octane gasoline and chemical industries programs imposed heavy responsibilites. On top of this, war industries' needs were increasing. Materials were scarce and manpower scarcer. But we were told this was an opportunity to help shorten the war. So of course there could be but one answer.

Our responsibilities included the development, design and production — in unprecedented quantities — of a score of new types of instruments, involving new principles, and closer operating tolerances than had ever before been required of process control instruments. In addition, we were asked to loan a number of our top engineers and technicians to the project.

Our production schedules had to be overhauled. Directives over-rode high-rated war orders. Civilian orders stood at the far end of the line. But the problems were solved, because thousands of people in our plants and in those of our subcontractors devoted their whole time to the project to the extent of seven days a week, month after month.

Naturally, we're proud of the way our organization came through. But we're proud too of our many, many customers who showed patience and understanding in the face of temporary delays in delivery for which we could only offer phoney-sounding excuses. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Taylor Instruments mean "Accuracy First."*

First American producer to provide technical service through a nationwide network of Application Laboratories nearby all textile centers, National Aniline offers the industry's broadest experience in color formulation and application in every field where aniline dyes are used. We welcome your continued use of this service.
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For Manufacturers and Merchants

Inquiries as to our services solicited

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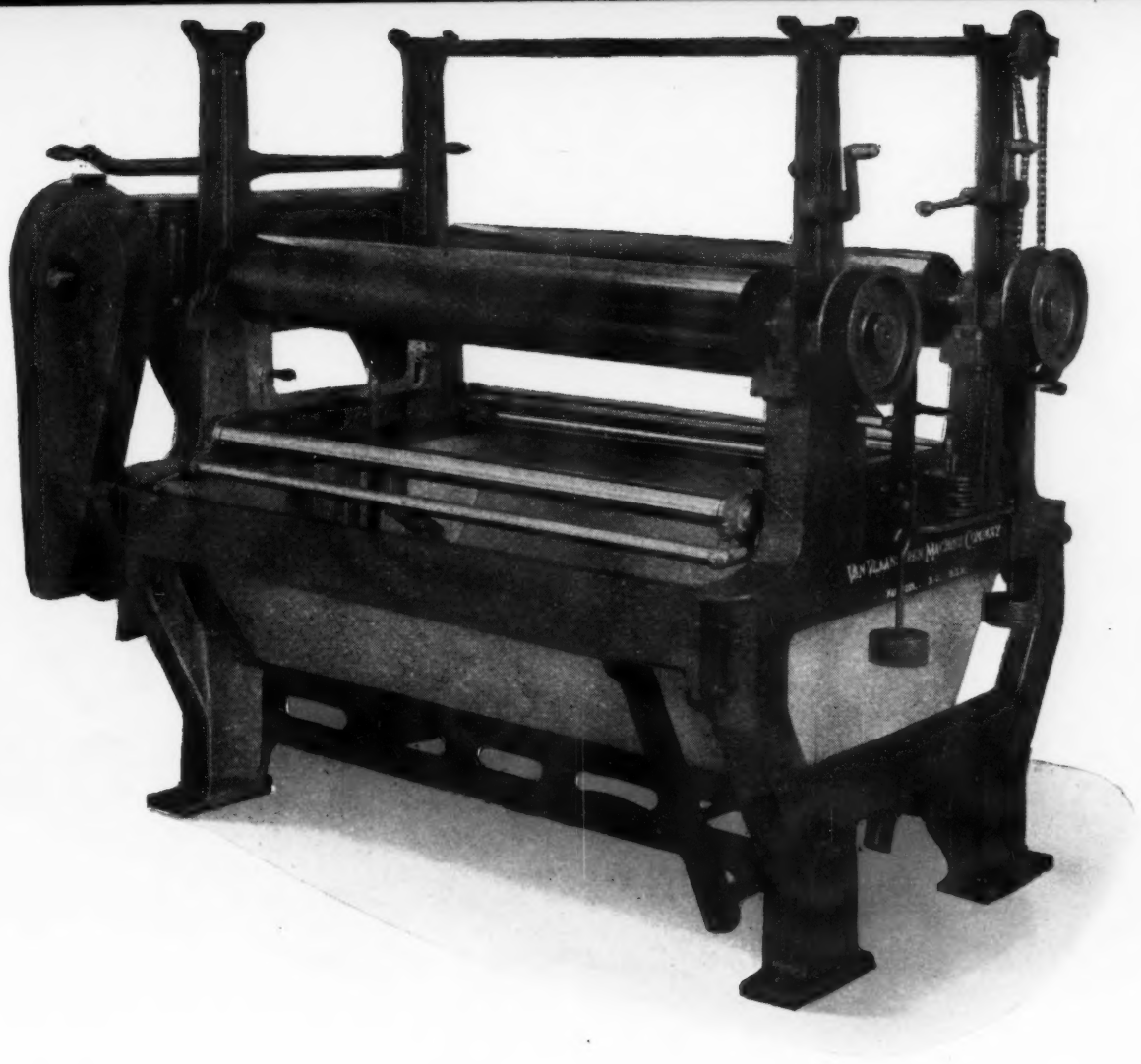


GOOD PRODUCTION, GOOD WORK, GOOD SERVICE

The
LOGICAL
DEVELOPMENT
FROM A LONG LINE OF
JIGGERS

At the beginning of the Twentieth Century, when this Company was established, we began building Dye Jiggers for the rapidly growing production of silk mixture fabrics. The original Jig has been redesigned and improved from time to time to take advantage of new materials such as stainless steel and improved dyeing methods resulting from our growing experience with rayon, nylon, acetates and other fabrics.

The machine illustrated herewith is modern in every respect. It is built in the customary Van Vlaanderen sturdy construction and designed to give years of trouble-free service.

All parts, stationary or moving, that contact the dye liquor are made of stainless steel. Write for folder giving full description and specifications.

VAN VLAANDEREN

MACHINE COMPANY, 370 STRAIGHT STREET, PATERSON 3, N. J.

World's largest manufacturer of machinery for processing modern fabrics

GET SET NOW-

PRINT YOUR WEIGHTS

Toledo PRINTWEIGH Scales keep weight records *right!* No human mistakes in reading, remembering and recording can slip in. For modern control in receiving, shipping, batching... get set now with Toledo PRINTWEIGH! Toledo Scale Company, Toledo 12, Ohio.

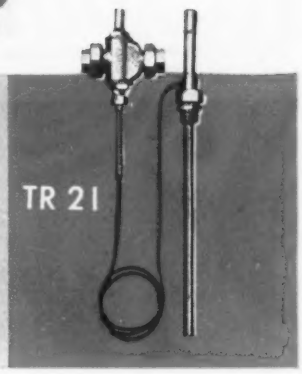
TOLEDO

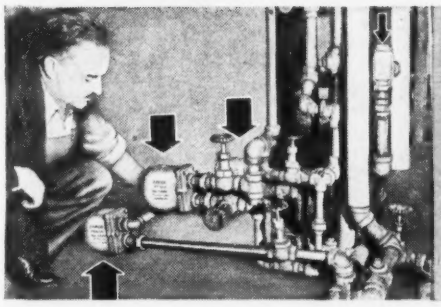
HEADQUARTERS FOR SCALES

HOW DOES SARCO SAVE
IN THE TEXTILE INDUSTRY?

Twist Setting

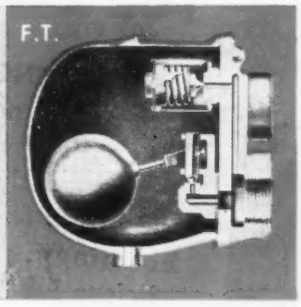
The production on treating yarns in ovens was materially increased by Sarco TR-21 temperature controls. Quality uniform—rejects reduced. Bulletin No. 600.

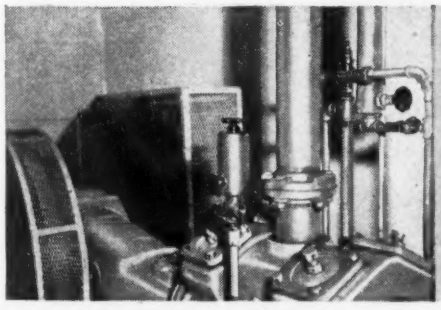




Agers

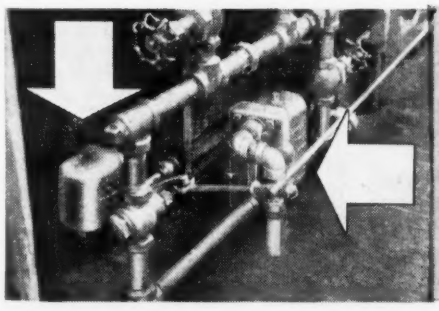
Three Sarco float-thermostatic steam traps and one No. 9 thermostatic trap stabilized the operation of this ager in a textile plant. This plant is All Sarco. Bulletin 450.





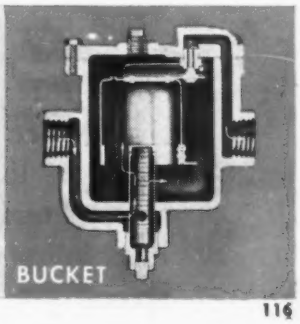
Compressor Cooling

The Sarco TR-40 cooling control reduces water consumption, makes compressors more effective. Other types for Diesels. Bulletin No. 700.



Finishing

The problem was to increase production. Sarco bucket steam traps did it by working harder, faster, and longer. Bulletin 350.



116

FOUR STARS ON OUR E PENNANT TESTIFY TO SARCO PERFORMANCE IN THE WAR EFFORT

ARMY E NAVY

SARCO SAVES STEAM

Represented in Principal Cities

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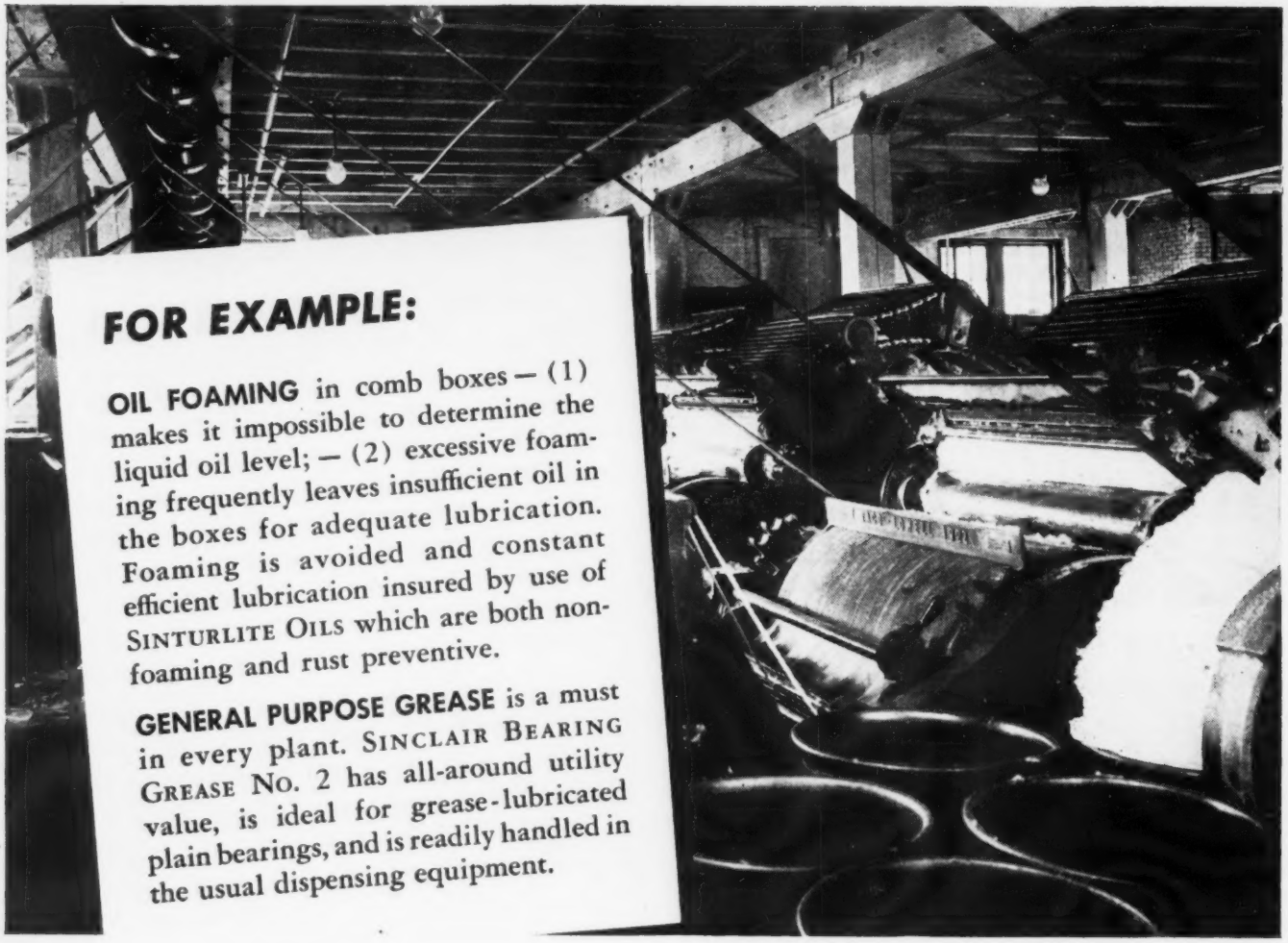
SINCLAIR has the ANSWERS to Your Lubrication Problems



FOR EXAMPLE:

OIL FOAMING in comb boxes — (1) makes it impossible to determine the liquid oil level; — (2) excessive foaming frequently leaves insufficient oil in the boxes for adequate lubrication. Foaming is avoided and constant efficient lubrication insured by use of SINTURLITE OILS which are both non-foaming and rust preventive.

GENERAL PURPOSE GREASE is a must in every plant. SINCLAIR BEARING GREASE No. 2 has all-around utility value, is ideal for grease-lubricated plain bearings, and is readily handled in the usual dispensing equipment.

PROPER LUBRICATION for all types of mill equipment is assured by Sinclair Textile Lubricants because they were specially developed through long research, practical service tests, and cooperation of machinery manufacturers. If your spinning room problems are excessive bolster wear, over-heating, and power loss there's a Sinclair Lily White Oil of correct viscosity to help eliminate these troubles.

* * *

Have you the Sinclair Textile Flow Chart, a helpful guide to efficient lubrication? It's free.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

Dayton Deluxe Loop Pickers

last longer..cut costs 50%

Dayton Deluxe Loop Pickers are breaking all existing records on a cost and production basis. Records show they cut costs as much as 50% while bringing about notable increases in production.

Moulded of special fabrics and more resilient rubber, bonded into an extra strong unit . . . with design features that include a flared bottom to protect the picker when applied, and rounded corners for extra smoothness . . . Dayton Deluxe Loop Pickers assure big savings and more efficient performance on high-speed looms.

You'll find the better answer to your picker problems right here—backed not only by the experience of hundreds of mills, but by the technical superiority found in all Dayton textile products.

Write today or get in touch with your nearest Dayton Distributor for additional facts about money-saving and long-lasting picker service for high-speed looms.

THE DAYTON RUBBER MANUFACTURING COMPANY
Famous Dayco Synthetic Rubber Products Since 1934
DAYTON 1, OHIO WAYNESVILLE, N. C.
Main Sales Office: Woodside Building, Greenville, S. C.

READ THESE ADVANTAGES

1. Greater strength for double life.
2. Resilient construction for proper cushion.
3. Flared bottom for protection when applied.
4. Rounded front corners to reduce roughness.
5. Perfect fit for easy application.
6. Precision mold to retain shape and fit stick.

DAYTON LUG STRAPS

Extra strong; better cushion; proper resilience; freedom from adjustment; lower cost; increased production.

Pickers by

Dayton Rubber

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

THE MARK OF TECHNICAL EXCELLENCE IN SYNTHETIC RUBBER

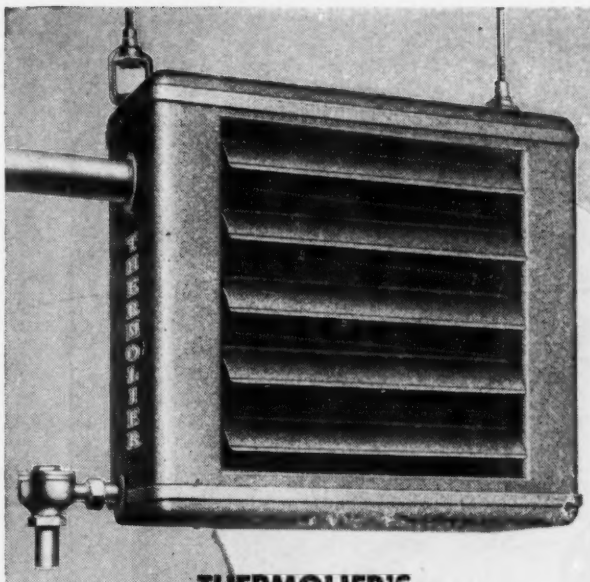
"Of course Otis makes small freight elevators, too."

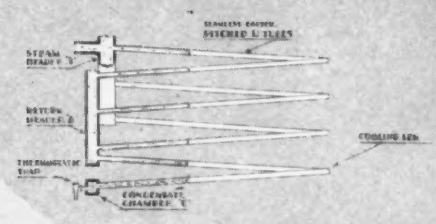
For a great many years, small freight elevators made up the greatest part of Otis business. Today, they still constitute a large percentage of Otis sales.

Small or large, for two stories or twenty, with Otis freight elevators you are assured of dependable and economical performance.

Your Otis representative is ready now to consider your requirements and to recommend the elevator equipment best suited to your needs. For the finest in vertical transportation tomorrow, call your Otis representative TODAY.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES





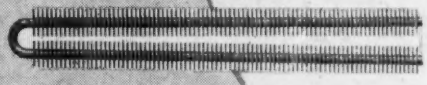
Thermolier's
INTERNAL COOLING LEG
(PATENTED)

Insures continuous drainage of condensate . . . maximum radiation from all surfaces at all times!

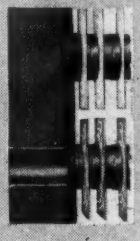
The exclusive Thermolier Internal Cooling Leg is No. 1 of the twelve reasons for the superiority of this unit heater. Besides insuring *all* the heater working *all* the time, it permits the use of a thermostatic trap, the simplest and least expensive of all traps. Drainage is continuous, eliminating damage by water hammer due to intermittent drainage cycles. *The Internal Cooling Leg built into Thermolier gives cooling effect of 100 feet of usual external cooling leg piping.*

A Grinnell Engineer will be glad to demonstrate this and other points of superiority of Thermoliers. He'll show you how Thermoliers will distribute heat uniformly to every square foot of your buildings and save up to 27% of still-scarce fuel. Ask for the new Grinnell Thermolier Catalog 6-E. It gives all the details of construction, application, capacities and installation. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch Offices in Principal Cities.

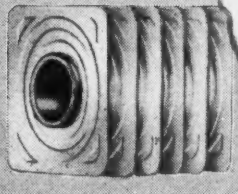
THERMOLIER'S SUPERIOR FEATURES



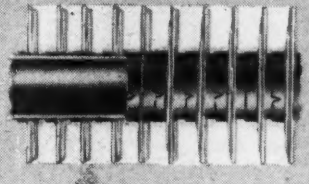
BUILT-IN EXPANSION PROVISIONS. The "U" type tubes allow expansion and contraction, ease damaging strains.



LEAKPROOF TUBE-TO-HEADER CONSTRUCTION. Joints made by the expanding method assure safety and durability.



SUPERIOR HEATING ELEMENT. Square copper fins on strong seamless copper tubing provide 24% more radiating surface.



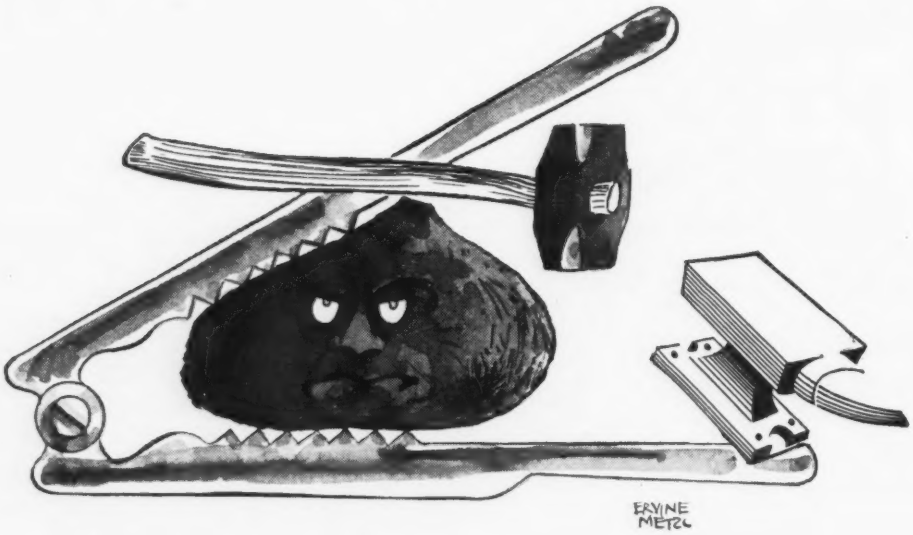
TUBE DESIGN MINIMIZES DIRT COLLECTION. Finned U-tubes with no flat horizontal fin surfaces minimize dirt collection which decreases efficiency. 89% of heating surface is vertical fins, 11%, round horizontal tubes.

Other Points of Thermolier Superiority – built-in drainage • continuous rated capacity • heavy frame gives greater rigidity • motor and fan meet specific Thermolier requirements • simple piping connections • adjustable hangers facilitate erection • packed for easy installation.

GRINNELL

Thermolier Unit Heaters
FOR FULL VALUE FROM FUEL DOLLARS

QUICK QUIZ:



Do you have a hard nut to crack?

Is the problem:

Eliminating need for rewinding by the knitter last quarter of coning package?

Keeping machinery adjustments at a minimum?

Maintaining spinning production at a peak 12 months of the year?

Reducing the amount of "fly" in carding?

Keeping fabric free from ties and mends due to yarn breakage?

Reaching full regain in yarn?

Reducing "ends" down?

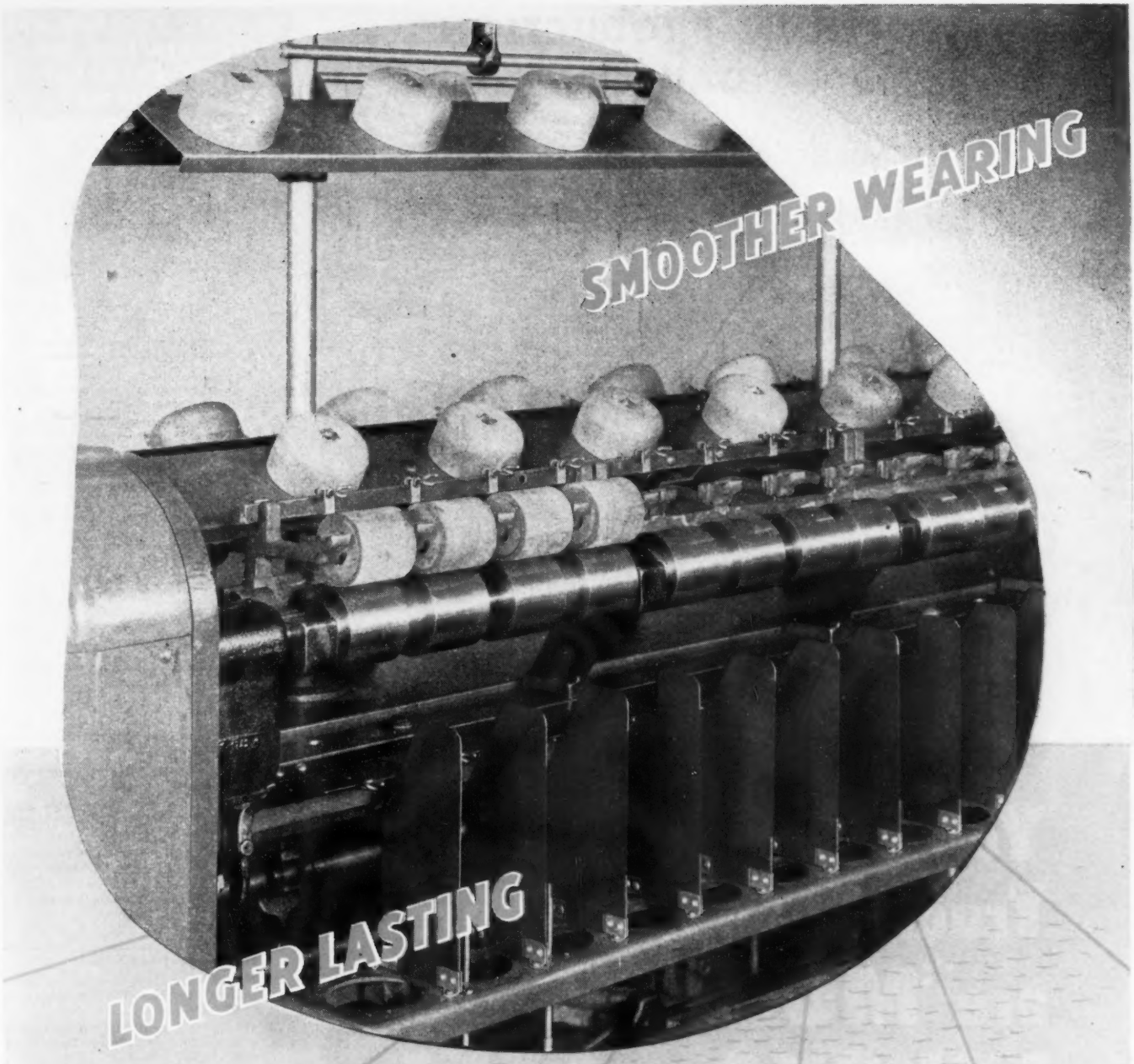
EASY ANSWER:

FOR 39 YEARS Carrier has been serving the textile industry — with the most efficient equipment for its special needs. Now, to all that experience, Carrier has added the important developments of its extensive wartime activities. Let Carrier put this "know how" to work for you — on your problem of air conditioning, refrigeration or unit heating. Write fully.

Carrier Corporation, Syracuse, N. Y.

Carrier

AIR CONDITIONING • REFRIGERATION
INDUSTRIAL HEATING



Formica parts for textile machinery never shatter, sliver, or wear rough. That is a big advantage where threads that are easily snagged have to be handled.

This tight, dense plastic material—itself, in part, a product of the textile industry—will usually provide two or three times as long a life in a given part of textile machinery as the material it displaces.

That means that several shut downs and teardowns for replacement are avoided—each one expensive in labor and material not to mention the lost production while the machine is down for overhaul.

Formica is used for many purposes: Separators, loom box linings, silent gear drive, picker sticks, knitting machine platforms, inspection table tops. Formica's presence on a textile machine is usually evidence that the design has recently been revamped and that the equipment is up-to-date.

THE FORMICA INSULATION COMPANY
4668 Spring Grove Avenue Cincinnati 32, Ohio

FORMICA

MORE MODELS IN PRODUCTION . . . 1,000 A DAY COMING!

You SEE more Ford Trucks because there are MORE FORD TRUCKS to SEE!

100 H.P. V-8 Ford 90 H.P. SIX

Ford Trucks are America's Number-One choice—proved by registration figures. And if you've ever owned or operated Ford Trucks you know *why* they're favorites. They save you money—in first cost, operating cost, maintenance cost. They are reliable, durable, simple and easy to service. Wherever you go, there's competent Ford service. There's a Ford Truck among the 42 current models and types that will do a good, efficient, economical job for you. Ask your Ford Dealer to tell you about the many new engineering advancements, and the latest priority regulations.

YEAR AFTER YEAR, OFFICIAL REGISTRATIONS SHOW MORE FORD TRUCKS ON THE ROAD—ON MORE JOBS—FOR MORE GOOD REASONS

32 GOOD REASONS WHY TODAY'S NEW FORD TRUCKS ARE THE GREATEST IN FORD HISTORY

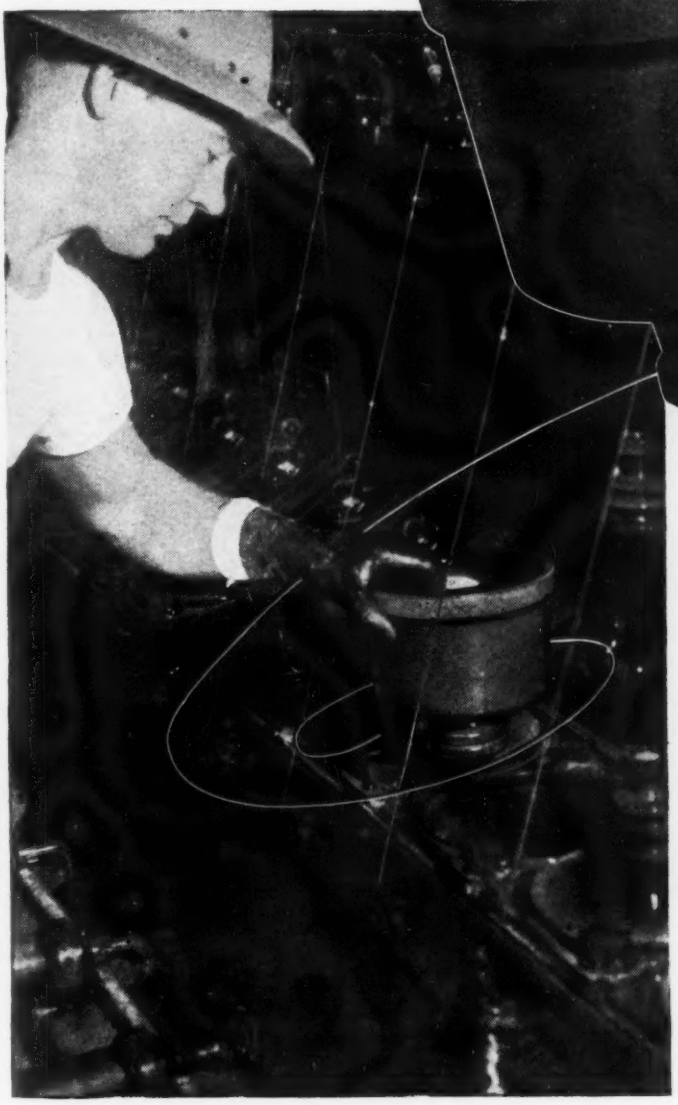
THE ENGINE

1. New aluminum alloy cam-ground pistons with 4 rings each—for improved oil control.
2. New steel-cored SILVALOY connecting rod bearings—provide 2½ to 3 times longer life.
3. Larger capacity oil pump—for improved lubrication and longer bearing life.
4. Rear main bearing oil seal—for added oil economy.
5. Oil filter, renewable cartridge type—to keep oil clean and reduce wear.
6. Removable plate at bottom of oil pan—for easy access to clean oil pump screen.
7. Balanced carburetion—for increased economy and efficiency.
8. Latest type self-washing oil bath air cleaner—keeps out destructive dirt, thus greatly prolonging engine life.
9. Thermostatically controlled exhaust by-pass valve regulates intake manifold temperature—for better fuel vaporization and economy.
10. Intake manifold—improved design for easy vacuum line connections.
11. New sealed-dry, V-outlet distributor—water-sealed, short-proof, air-cooled, trouble-free—streamline-molded of dielectric bakelite, with neoprene-coated high-tension leads protected by heavy ozone-resistant plastic jackets.
12. New aluminum timing gear—for longer life and silent operation.
13. Valve springs shot-blasted and rust-proofed—for longer life.
14. New stronger piston pins—for longer life.
15. New design interchangeable cylinder heads—for simpler, lower cost servicing.
16. More efficient exhaust valve cooling—for longer valve and cylinder block life.
17. High-efficiency fan—for better cooling.
18. Pressure-valve radiator cap—to prevent loss of coolant and improve engine operating efficiency.
19. New bronze thrust washer in water pumps—to prevent leaks and give longer life.
20. Oil-resistant synthetic rubber engine mounts with new design front cups—for longer life.
21. Oil pan divided at clutch housing—provides easier clutch servicing.

THE CHASSIS

22. Larger clutch in Tonner truck. 44.7% increase in friction area—for longer life.
23. Four-speed transmission now standard in Tonner—for more efficient operation and longer life.
24. Four-speed transmission, internal spring reverse lock—eliminates latch on shift lever.
25. New-design transmission main shaft splines—to provide positive gear mesh under load.
26. Thrust washers added at ends of four-speed transmission countershaft gear—for longer life.
27. Larger tires now standard on all chassis—to obtain maximum life from present-production tires.
28. Wheel rims uniform wide-base on each model—for better tire life and simplified servicing.
29. Two-speed axle vacuum shift—for easier control and elimination of separate shift lever.
30. Additional sill cross-member at rear of cab—for greater stability and longer cab life.
31. Cab door window glass mounted in metal frame—for greater strength to prevent glass breakage.
32. Larger, adjustable-arm rear-view mirror—for increased visibility and safety.

8000 RPM WITHOUT VIBRATION . . .



WITH PRECISION-MOLDED AND DYNAMICALLY BALANCED MICARTA SPINNING BUCKETS

Micarta spinning buckets save money—and speed output—in the production of synthetic fibers.

Molded to close tolerances, and balanced both statically and dynamically, they are virtually vibrationless at all operating speeds... withstand rough handling and continuous usage much better than previous materials.

This application of Micarta demonstrates some of the many advantages Micarta offers for textile mill applications. It is resistant to water, oils and acids. It absorbs vibration and deadens noise. It will not stain delicate fabrics. It is tough, smooth and long-wearing.

In addition to molding, Micarta can be fabricated easily from laminated stock shapes by machining, sawing, drilling, punching, tapping and threading with ordinary tools. Micarta "444"—a preformed material—can be post-formed with inexpensive dies into intricate, permanent shapes.

The Micarta Data Book gives complete details. Write for your copy, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-06374

PIRNS of Micarta are easily machined to close tolerances—for balance, to avoid vibration at high speeds. They are stainless, and stay smooth.

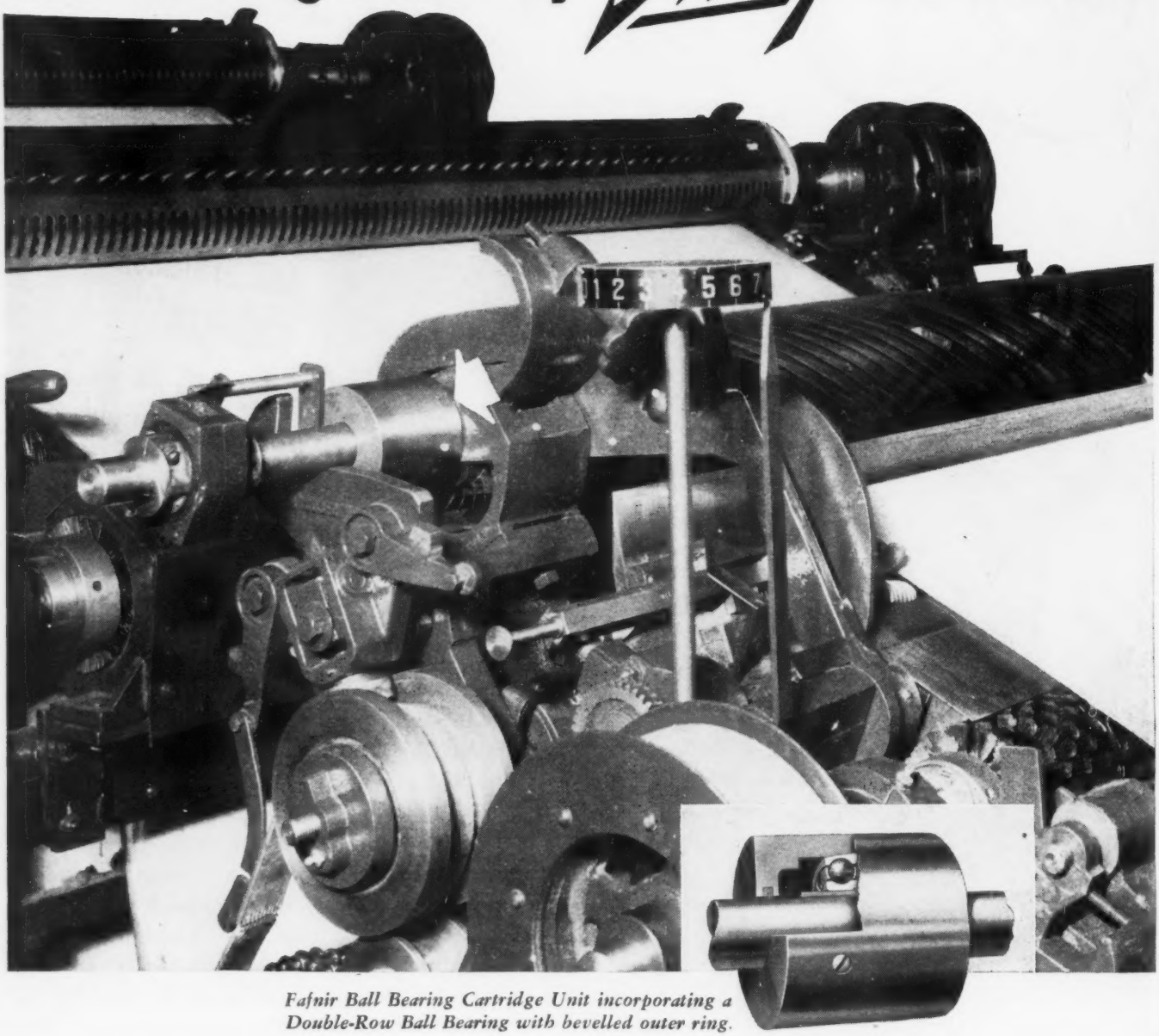
WASH CHUCKS of Micarta are long-lasting—unharmed by the chemicals met in this work—will not stain delicate fabrics.

FLINGERS of Micarta protect motors and gears from dripping liquids, chemicals and dust.

WESTINGHOUSE

Micarta

Ball-bearing accuracy "Sharp" as a knife



Fafnir Ball Bearing Cartridge Unit incorporating a Double-Row Ball Bearing with bevelled outer ring.

In the Davidson Automatic Shear, product of Parks & Woolson Machine Co., Springfield, Vt., specially designed Fafnir Ball Bearings hold the knife to costly fabrics in one of the most exacting of finishing operations. Each of the three revolving shears turns on two cartridge type units incorporating a double-row ball bearing with bevelled outer ring.

The revolving shears must be in positive alignment and perfect setting. Otherwise the shear would either impinge on the knife or the machine would give too coarse a shear.

Permissible eccentricity allowance for the assembled units are held to precision limits. That guarantees perfect setting for the shear shaft regardless of changes in remounting. Cloth feeds run as high in these Davidson Machines as 40 yards a minute but these Fafnirs hold their accuracy and demand a minimum of attention.

That's the kind of engineering that is adding constantly to textile men's respect for Fafnir's textile experience and aptitude. Why not write for any specific information you'd like . . . and for a catalog of Fafnir Specialized Textile Bearings? The Fafnir Bearing Company, New Britain, Conn. Branch offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.

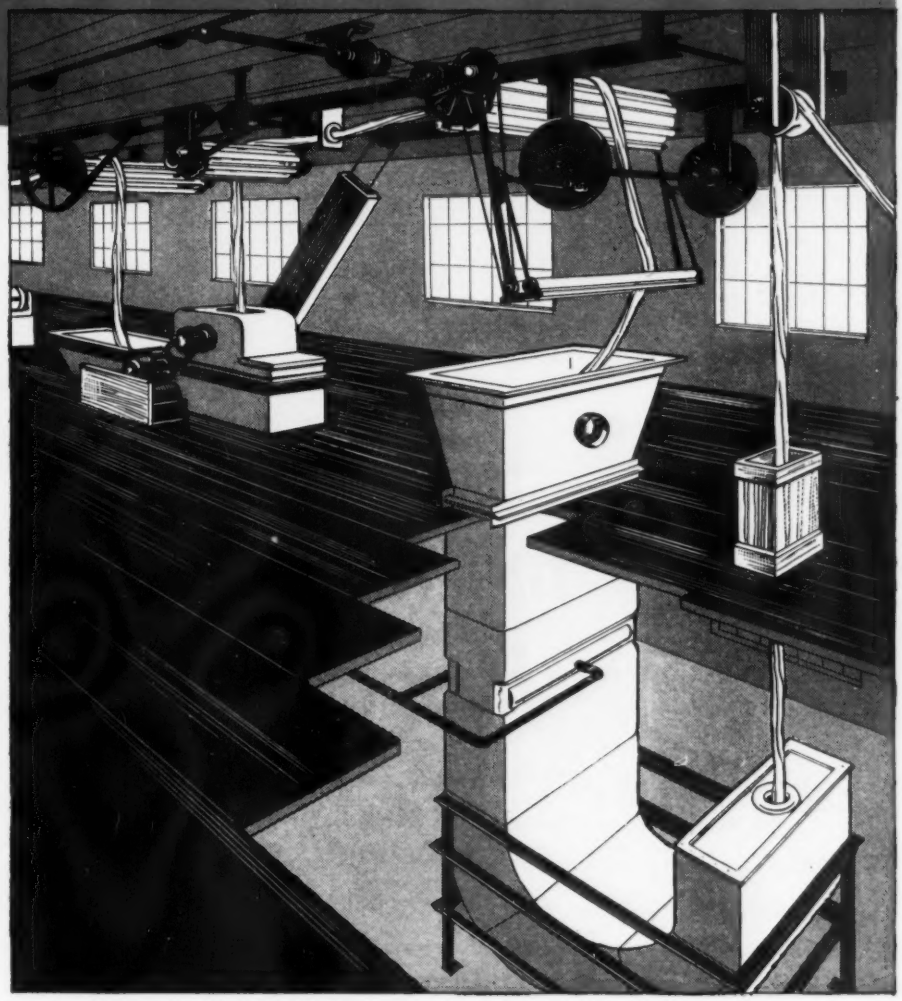
FAFNIR

BALL BEARINGS

Most Complete Line in America

What BECCO professional services did in this mill...

...can ALSO be done in Yours



"Nothing Moves but the Cloth"

Working under existing conditions, formulas were revised which effected immediate savings in time and a reduction in bleaching costs. At the same time plans were formulated to simplify the operating procedure. Later on when this company was ready to undertake the major changes proposed by Becco Engineers, necessary to simplify production, a straight-line production system was set up. This enabled them to be one of the first mills in the country to take full advantage of the newest development —steam bleaching. And now, their bleaching costs have been reduced very substantially.

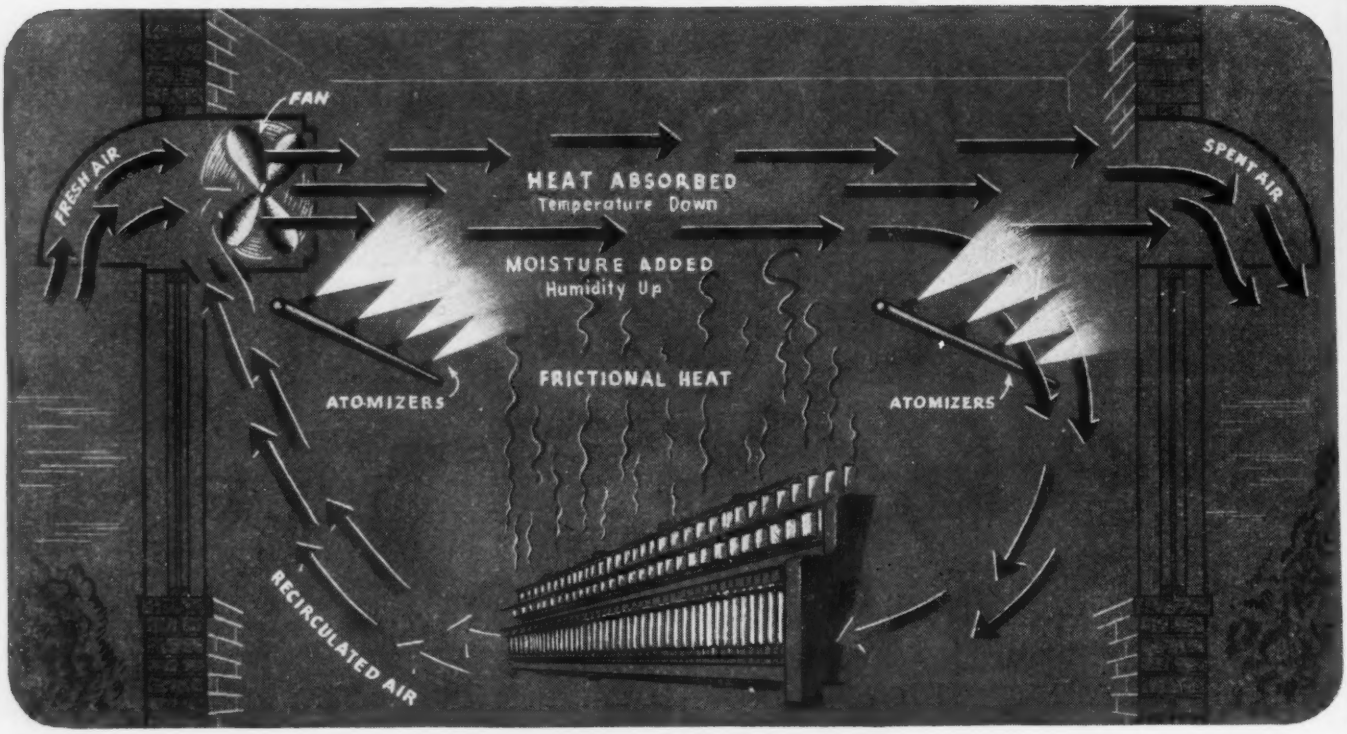
Such results, following Becco professional engineering and chemical services, can also be effected in your bleaching operations. Becco engineers and chemists have had many years of specialized bleaching and processing experience. Why not have one of them make a survey of your plant and have him advise as to the most efficient and economical method of bleaching, regardless of the amount of poundage you bleach. Write *today* to:

BECCO SALES CORPORATION

AGENTS FOR BUFFALO ELECTRO-CHEMICAL CO., INC., BUFFALO 7, N. Y.

New York Boston Philadelphia Chicago Charlotte

Not an ATOM SMASHER
though it uses ATOMizers



It's the AMCO Evaporative Cooling System!

SIMPLE . . . efficient . . . the AMCO Evaporative Cooling System is ductless and clean. It works like this (see diagram): a controlled amount of fresh air is drawn in from the outside and combined with some recirculated air. Spray delivered from atomizers introduces moisture which is evaporated into the air, raising the relative humidity to the desired point. Frictional heat generated by operating machinery is absorbed by the evaporation of moisture into the air thus reducing excessive room temperature to normal. Spent air is exhausted through automatically controlled vents.

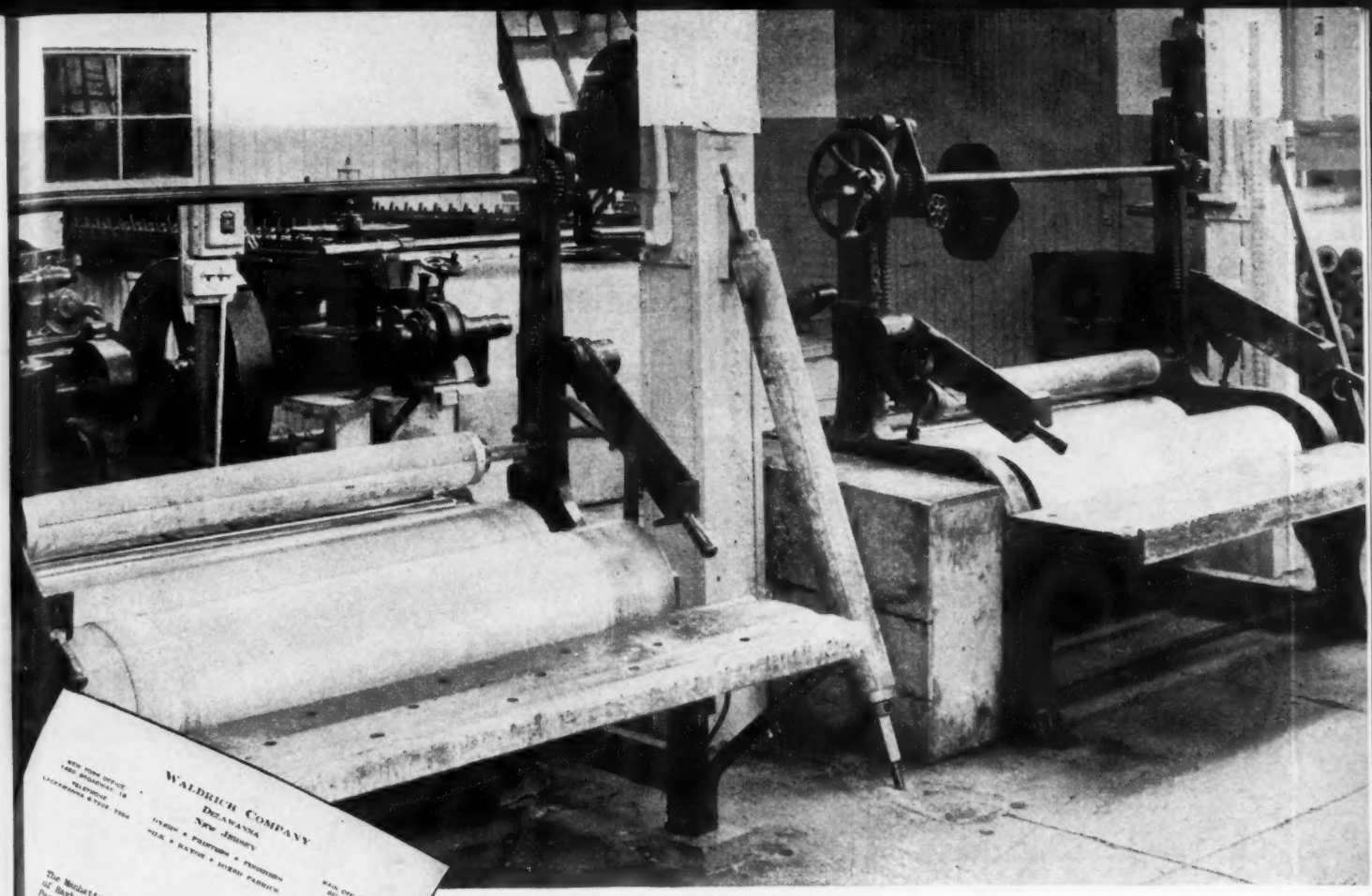
An AMCO engineer will be glad to show you how, with this system, you can prepare for the race for competitive production beginning now.

THE CONTINUOUS PROCESS OF COOLING AND HUMIDIFYING DOES THESE THINGS . . . HAS THESE FEATURES:

- ★ **Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.**
- ★ **Speeds production in high friction (heat) areas.**
- ★ **Assures evener yarn counts and increases breaking strength.**
- ★ **No cumbersome ducts to become clogged and obstruct light.**
- ★ **Easy to install — minimum disruption.**
- ★ **High flexibility to meet changing room conditions.**
- ★ **Minimum maintenance.**
- ★ **Amco Evaporative Cooling utilizes your present humidification system.**
- ★ **Increases workers' comfort.**

AMCO EVAPORATIVE COOLING SYSTEMS

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • BOSTON • ATLANTA • CHARLOTTE



WALDRICH COMPANY
DELAWANNA
New Jersey

May 21, 1945

The Manhattan Rubber Mfg. Division
of Raybestos-Manhattan, Inc.
Passaic, New Jersey

Gentlemen:

Attention: Mr. Henry Te Heer

We are pleased to attach photographs of two sets of ... rolls, rubber covered by you, which to our knowl... are at least 25 years old, have never been removed ... machines, and still look good for many more years ... estimate that during this period of time, ... hundred million yards of goods have passed over ...

Very truly yours,
WALDRICH COMPANY
R. Ritchie
Purchasing Agent

OVER 500,000,000 YARDS
in 25 years over these
MANHATTAN RUBBER COVERED ROLLS

"have never been removed from the machines, and still look good for many more years to come."

A quarter century of uninterrupted, trouble-free service and more years to come. Certainly a satisfactory investment. Nor is it unusual for MANHATTAN batching rolls. Other users of these Rubber Covered Rolls keep reporting comparable service records.

As good as were MANHATTAN Textile Rolls a quarter of a century ago, they're better still today. Out of constant research has come FLEXLASTICS with better aging properties, closely controlled and uniform densities in a wider range, to assure you long and profitable service, whether on batchers, scutchers, slashers, padders, mercerizing equipment or other textile machines.

Make your next new rolls or recovering job an investment through the use of FLEXLASTICS.

Roll covering plants at Passaic. N. J.; North Charleston, S. C.; Neenah, Wis.

Condor PRODUCTS

Cone Belt
Transmission Belt
V-Belt
Agricultural Belting
Air Hose
Acid Hose
Water Hose
Fire Hose
Steam Hose
Suction Hose
Molded Rubber Goods
Oilless Bearings
Hard Rubber Pot Eyes
Rubber Lined Tanks
Rubber Covered Rolls

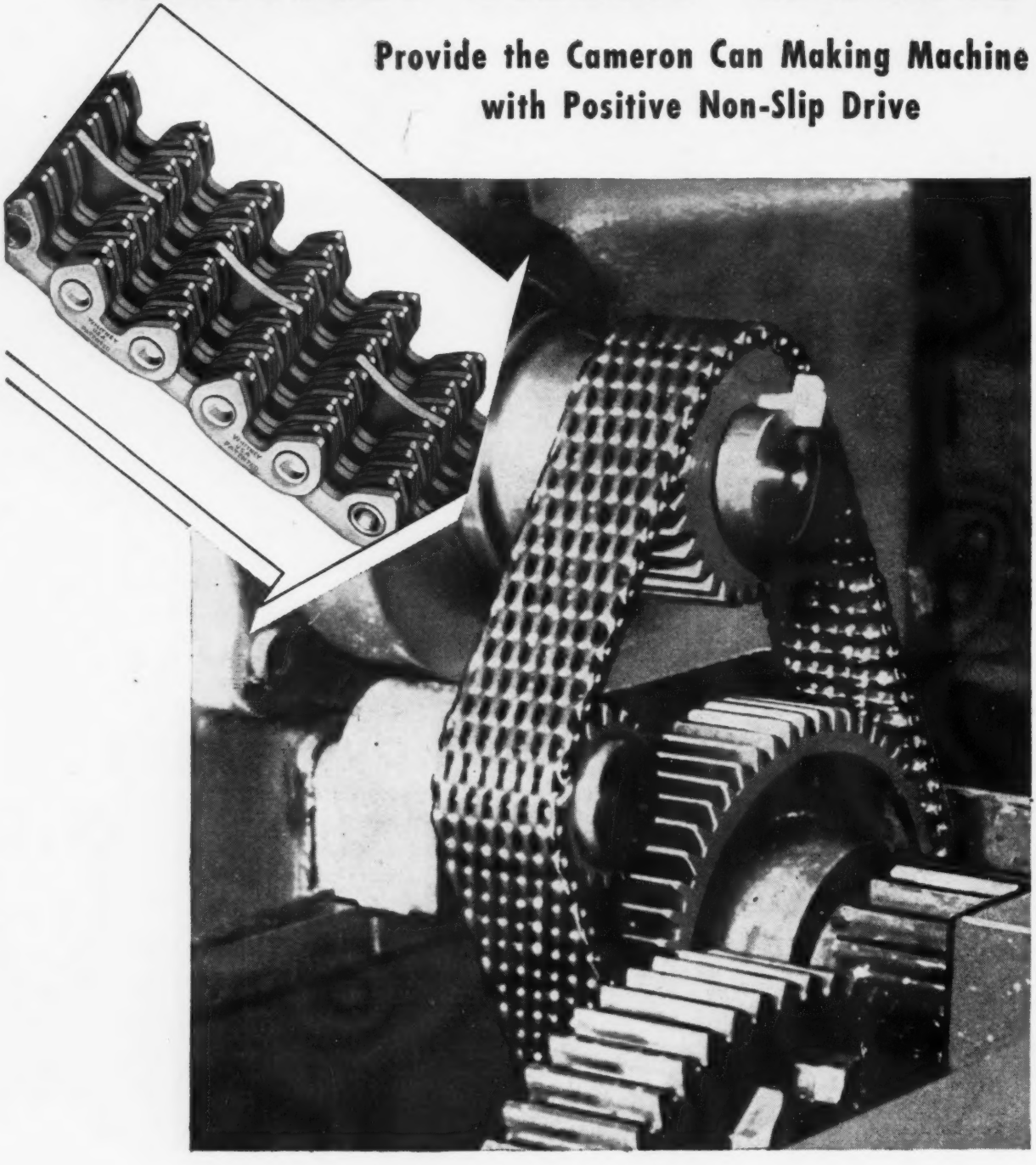
Abrasive Wheels
Bowling Balls

RM

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES and FACTORIES • • • PASSAIC, NEW JERSEY

WHITNEY SILENT CHAINS...

Provide the Cameron Can Making Machine with Positive Non-Slip Drive



Here is a Whitney Silent Chain soldering attachment shaft drive on the Cameron Can Company body making machine. Like so many prominent manufacturers, the Cameron Can Company chose Whitney Silent Chains for highest transmission efficiency—to eliminate power losses due to slippage and frictional contact. For production stability and product uniformity, standardize your drives with Whitney Silent Chain.

THE WHITNEY CHAIN & MANUFACTURING COMPANY
HARTFORD 2, CONNECTICUT

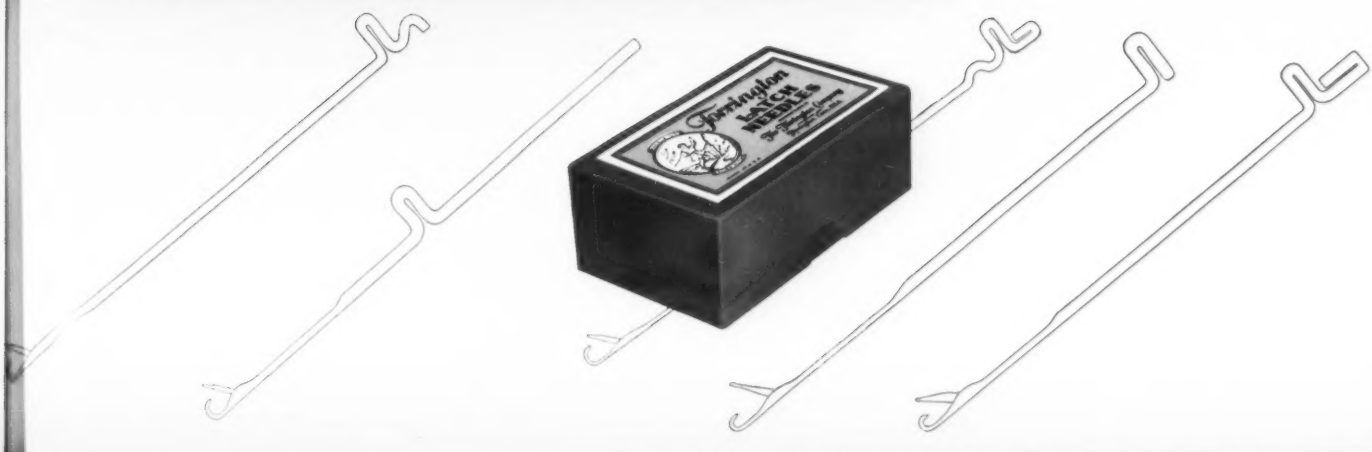
HEARTY

Approval

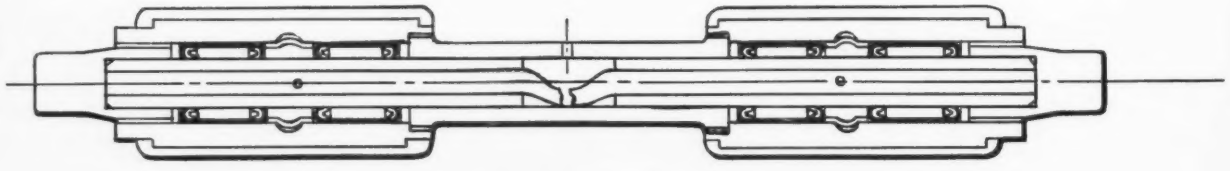
for knitted sportswear is won by style, color and good knitting. But good knitting counts most in *keeping* the approval hearty. Let the uniform, machine-made quality of Torrington Needles help you make and hold customers with fine knitting.

TORRINGTON
Latch Needles

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A.
Established 1866
Branches: New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis
Toronto, Canada



1945



X-section shows application of light, compact Torrington Needle Bearing to Spinning Top Roll. Of high radial capacity, these modern anti-friction bearings are widely used on virtually all types of textile machinery.

For Evener Yarn, Cleaner Frames

Specify Torrington Needle Bearings

The smooth and positive action of top rolls equipped with Torrington Needle Bearings results in more even drafting, more uniform ends to the packages.

Another outstanding advantage of Needle Bearings in this application is their efficiency of lubrication. Lubricant cannot escape to act as a trap for lint and fly, and cleaning bother is greatly reduced. Also, the extended periods of operation before relubrication is necessary mean longer continuous production.

Helping textile machinery turn out more and better work at less cost in time, trouble and money is a year-around function of these low-cost, efficient Torrington Needle Bearings. For complete data on proved-in-use applications, write today for our new Catalog 32.

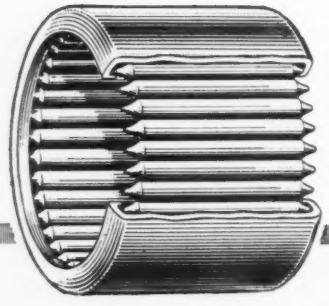
•

THE TORRINGTON COMPANY

Established 1866

TORRINGTON, CONN. • SOUTH BEND 21, IND.

New York Boston Philadelphia Detroit Cleveland Seattle Chicago San Francisco Los Angeles Toronto London, England



TORRINGTON NEEDLE BEARINGS

Form J — General Purpose Application

The Top Half Closed on Century Form J Motors Gives EXTRA PROTECTION

Against Falling Solids and Dripping Liquids

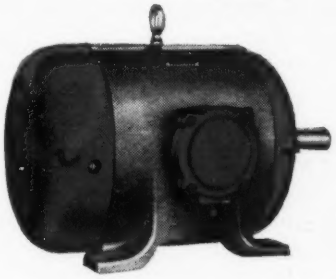
The Century Form J motor is a general purpose, open rated, continuous duty motor with an extra protective safety factor. The upper half of motor frame is completely closed, reducing the possibility of dripping liquids and falling solids entering the vital parts of the motor.

Adequate ventilation to compensate for the partial inclosure is provided by two fans to force a blast of cooling air around the bearings and ventilating passages surrounding the windings.

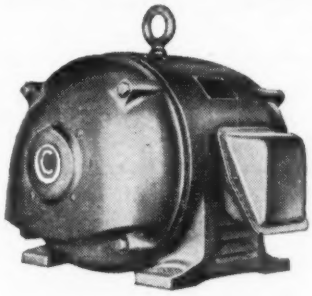
A Century Totally Enclosed Fan Cooled motor is available for installations requiring protection from atmospheres charged with abnormal quantities of metallic or abrasive dusts or powders, or abnormal amounts of acids, or alkali fumes.

For complete information on how Century motors are being used in the textile industry — and how they can bring benefits to you, call in a Century engineer, today.

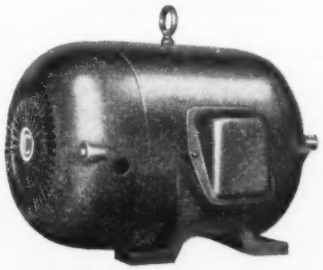
3 Other Types of Protection



Century Explosion Proof Motor



Splash Proof Protection



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Century C MOTORS

CENTURY ELECTRIC CO.

1806 Pine Street St. Louis 3, Missouri

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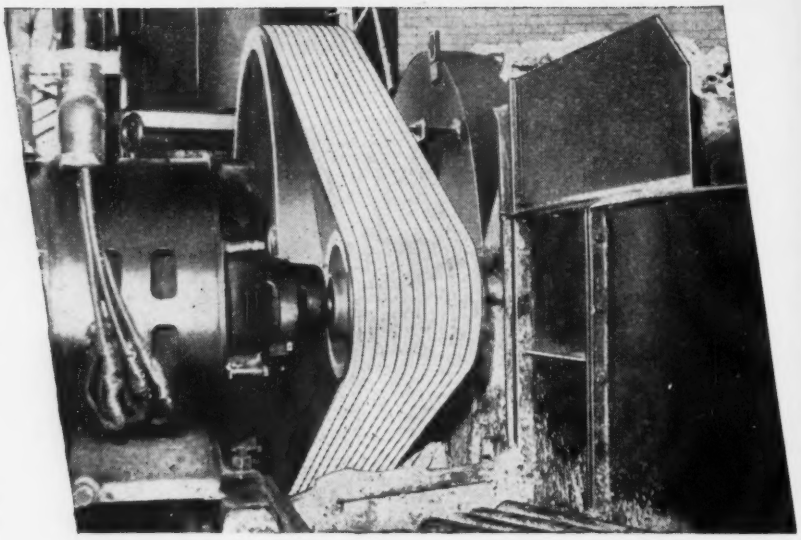
Today-

Your *Standard*
GATES VULCO ROPES



are giving BETTER SERVICE than

ANY V-Belts EVER Built Before the War!

To meet the unprecedented severity of combat service on U. S. Army tanks, tractors and self-propelled big guns, Gates developed and built V-Belts *far superior* to any that were ever built before--and here is why this fact is important to YOU:—

✓ **Every improvement developed by Gates for these Army V-BELTS has been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.**

You have not had to wait until after the war for these improvements for the simple reason that more efficient V-Belts have been an important factor in increasing essential war production. That is why your standard Gates Vulco Ropes are today the best V-Belts that have ever been delivered to you.

In addition, where V-Belts of special construction are required, your Gates Rubber Engineer is in position to supply a Gates Vulco Rope that is especially engineered to meet your special needs. You need only pick up your phone book and look under the heading "Gates Rubber." The Gates Rubber Engineer will bring to you, right in your own plant, the very latest advances in V-Belt construction and in drive operation as well.

and NOTE THIS:—

Gates also makes these special belts to meet exceptional service needs.

Rayon Cord V-Belts
Static-Safety V-Belts
***Special* Synthetic V-Belts**
Cotton Cord V-Belts
Steel Cable V-Belts

All Gates V-Belts are Built With *The Patented* CONCAVE SIDE

Gates THE MARK OF SPECIALIZED RESEARCH

THE GATES RUBBER COMPANY

Engineering Offices and Jobber Stocks in All Large Industrial Centers

4510

GATES VULCO ROPE DRIVES

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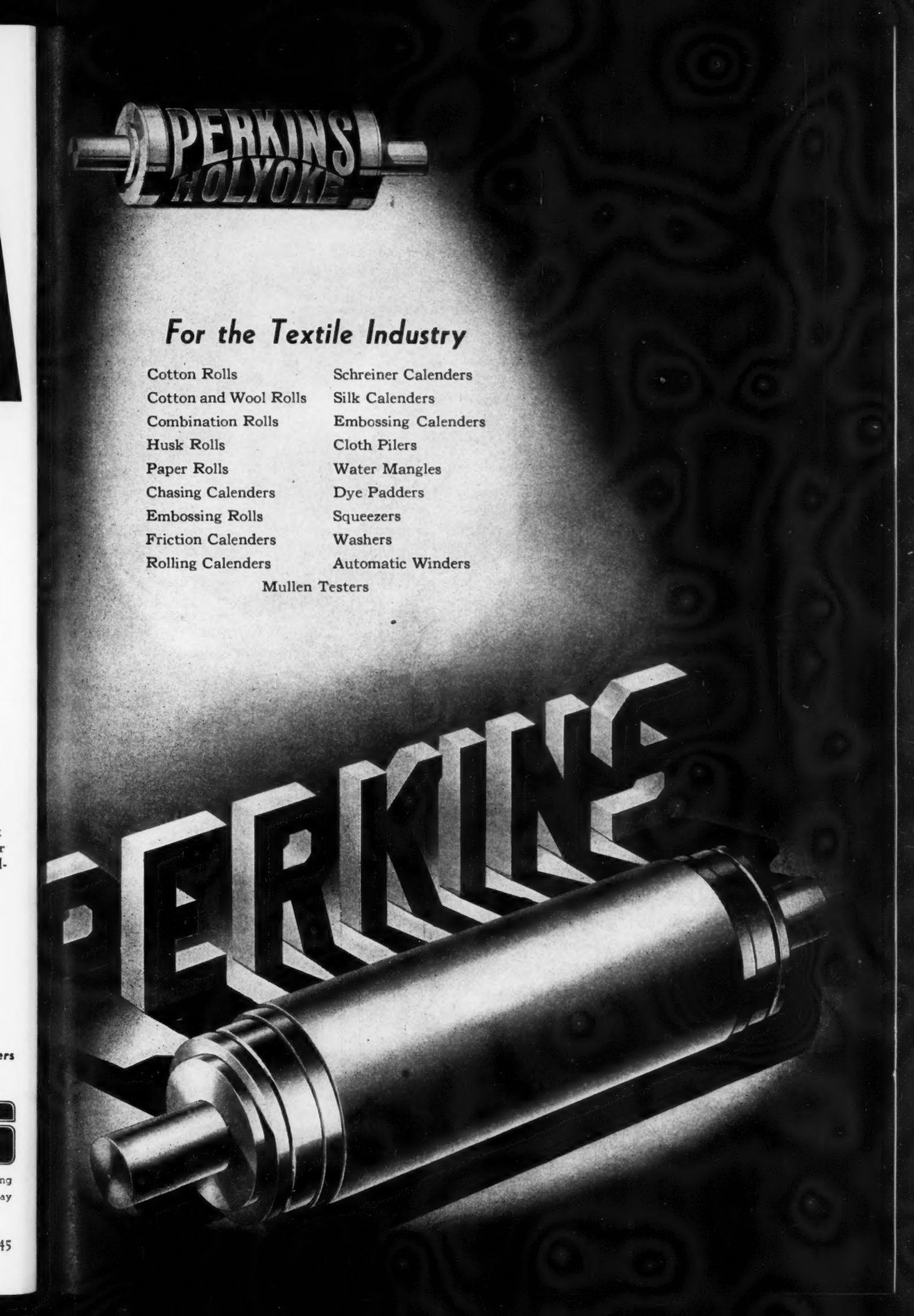
CHARLOTTE 2, N. CAROLINA, 605 West Fifth St. NEW YORK CITY 3, 215-219 Fourth Ave. DENVER 17, COLO., 999 South Broadway
GREENVILLE, S. CAROLINA, 108 W. Washington Street BIRMINGHAM 3, ALA., 801-2 Liberty National Life Bldg.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Cloth Pilers
Water Mangles
Dye Padders
Squeezers
Washers
Automatic Winders
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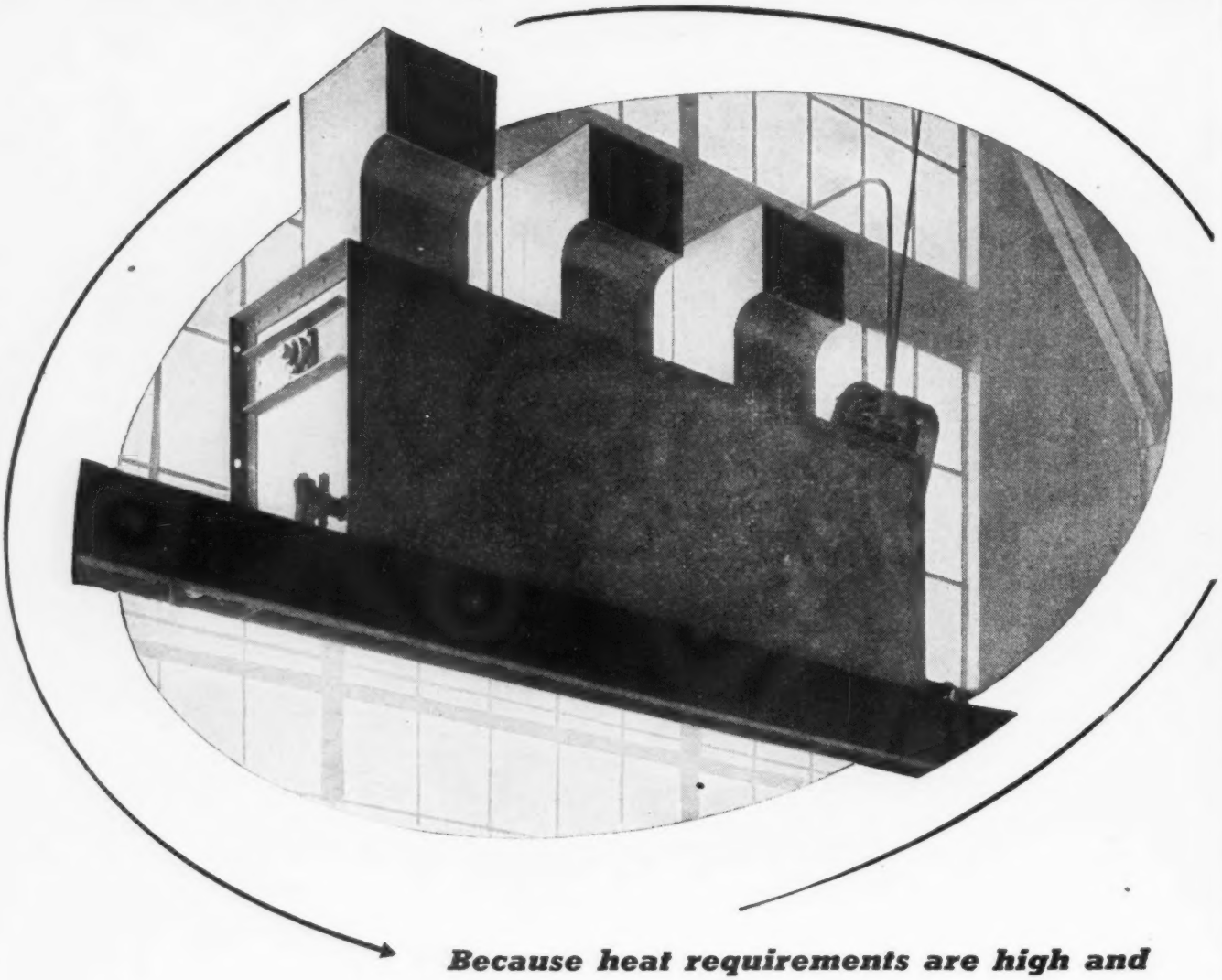
PERKINS



Because heat requirements are high and beam strengths low, heaters were made of

Lightweight Alcoa Aluminum

Large glass areas, numerous doors, and high bays in this factory building meant that heaters had to be large. Steel trusses, already loaded, could not carry additional heavy equipment, so Alcoa Aluminum was used because of its light weight.

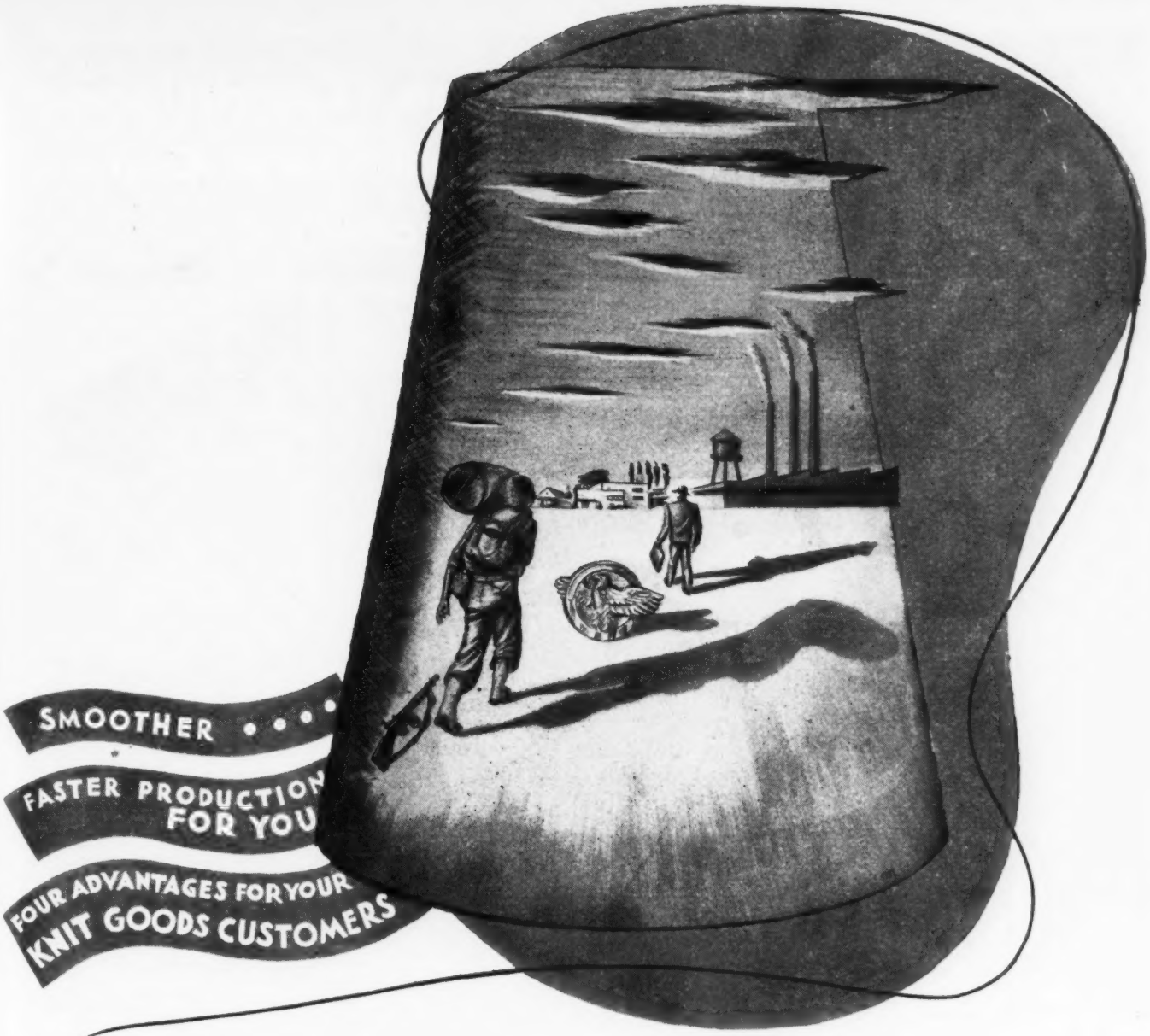
Weight saving is frequently the reason for employing aluminum on heating, air conditioning and ventilating work—blowers, ducts, dust separators. Not only is less burden placed on supports, but erection is easier. Installation costs are lower.

Ability to resist the corrosive attack of moist, fume-laden vapors is another reason for the use of large quantities of Alcoa Aluminum in these fields. Maintenance costs are thereby reduced.

Specify Alcoa Aluminum and gain these advantages. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM

ALCOA ALUMINUM



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STANDARD Durene assures smoother, faster production. Your customers will welcome the extra marketability STANDARD Durene's four advantages will give their merchandise . . . extra comfort, strength, quality and service. STANDARD Durene . . . multiply mercerized combed cotton yarn . . . produced under quality controls dictated by our own 68 years' spinning experience and the standards set by the Durene Association to assure greater absorbency, longer wear, more lasting luster, and better washing properties than any ordinary cotton yarn.

Make sure your merchandise has these advantages in the highly competitive peace market ahead . . . take steps now to get them.

The trade mark "Durene" may be used only by licensees on merchandise of good quality and workmanship which can meet performance tests of a qualified laboratory.

Made of Durene® 2-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ...more absorbent
EXTRA STRENGTH ...longer wear
EXTRA QUALITY ...lasting lustre
EXTRA SERVICE ...easy to wash
* Reg. U.S. Pat. Off.

STANDARD-COOSA-THATCHER CO.

CHATTANOOGA 1, TENN.

Sales Office: 1232 Fidelity-Philadelphia Trust Building, Philadelphia 9, Pa.

S-C-T

STANDARD DURENE • SELO • PREEMO • COMBED SAKS • THREADS

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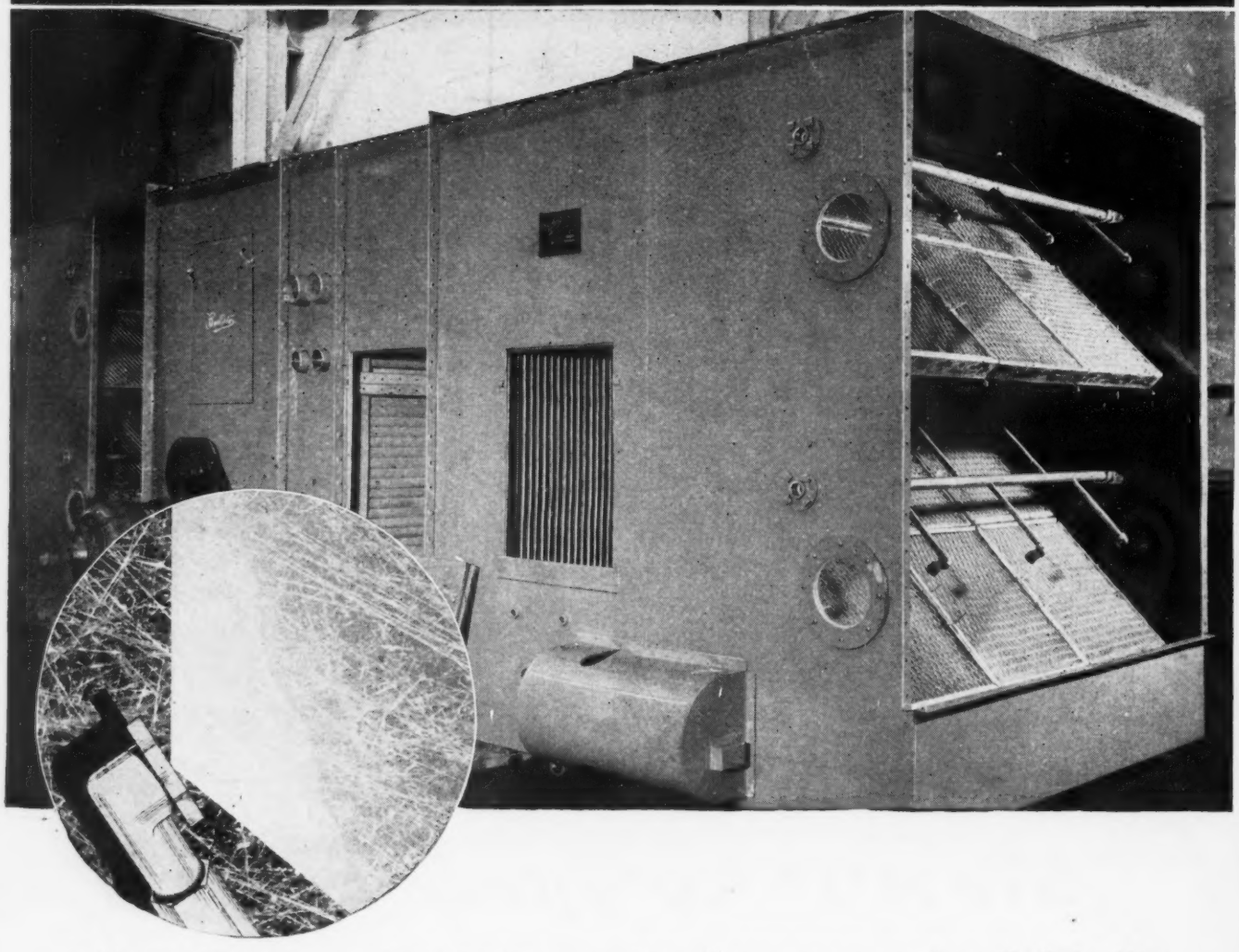
REPRESENTATIVES IN OTHER PRINCIPAL AMERICAN CITIES AND IN CENTRAL AND SOUTH AMERICAN COUNTRIES

"Buffalo" provides Clean, Conditioned Air at Moderate First Cost – Low Operating Cost



• Air conditioning need not be too expensive if you use a modern Buffalo Wet Glass Cell Air Washer with a quiet Buffalo LL Fan. One of the oldest names in air conditioning, "Buffalo" has consistently carried as a policy of keeping air conditioning equipment simple. This latest "Buffalo" air washer will give you any degree of comfort conditioning desired, yet is extremely simple to install and easy to operate and service. The wet glass cell filters provide excellent air-cleaning at very low cost. Why not write for Bulletin 3457 which gives complete information.

BUFFALO FORGE COMPANY
184 Mortimer St. Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

"Buffalo"
WET GLASS CELL WASHERS
with
LL FANS

A FEW TIRED VALVES

CAN MAKE A WHOLE PLANT DOZE . . .

Worn-out valves at vital control points could make your entire plant lay down on the job. Valve failure is almost certain to interrupt work while repairs or replacements are made. Often it means ruin to materials in process. Sometimes, it brings serious danger to equipment and personnel.

Many valves which were nearing the retirement state before the war may now be dangerously close to complete collapse, as a result of carrying the abnormal service loads of wartime production. Trying to "revive" such valves is seldom worth the money and labor required.

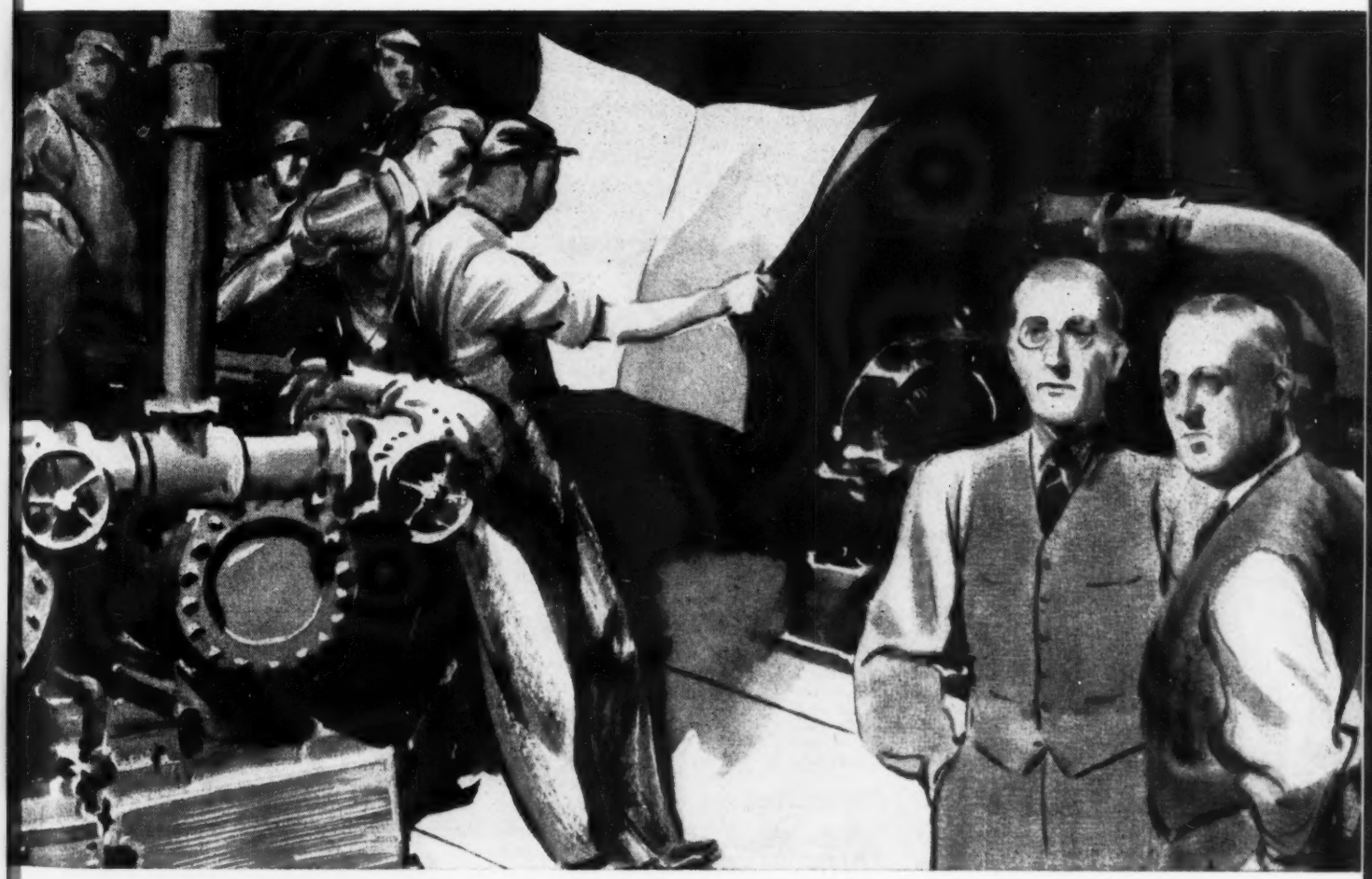
HOW TO SPOT "CRIPPLES" BEFORE THEY PUT YOU ON THE SPOT

Write for samples of the "Valve Record Sheets" prepared by Jenkins Engineers. Jot down the age and condition of every critical valve in your plant – its "trouble" record – and the cost of labor and parts for repairs. In this way you very quickly locate the points where new valves should be provided.

REPLACE WITH JENKINS VALVES . . . TO TAKE A LOAD OFF YOUR MIND . . . AND COST SHEET

For nearly a century Jenkins Valves have given dramatic demonstration of their low cost by remarkably long service records in thousands of installations throughout America. Jenkins Bros. better materials, better design, and better workmanship have always made a better valve. Over 600 patterns for every service are shown in the Jenkins Catalog.

Jenkins Bros., 80 White Street, New York 13; Bridgeport, Conn.; Atlanta, Boston, Philadelphia, Chicago, San Francisco. Jenkins Bros., Ltd., Montreal, London.



LOOK FOR THIS JENKINS DIAMOND MARK

JENKINS VALVES

SINCE 1864

For every Industrial, Engineering, Marine, Plumbing-heating Service . . . In Bronze, Iron, Cast Steel and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

Sold Through Reliable Industrial Distributors Everywhere

JENKINS BROS., 80 White St., New York 13, N. Y.

Please send me a set of the Jenkins "Valve Record Sheets"

Name .....

Company .....

Address .....

.....

For 20 Years... ALUMINUM VALVES by POWELL

have been helping Industry to combat corrosion in flow control.

Twenty years ago—anticipating the need for corrosion-resistant valves—the Powell Special Alloy Division was established. Today, the complete POWELL Line includes valves of all necessary types and designs, not only in bronze, iron and steel, but also in a wide variety of pure metals and special alloys to meet every existing requirement for corrosion resistance. POWELL Aluminum Valves* are a good example of POWELL Leadership in this field.

Be sure to write for our new booklet—"POWELL VALVES FOR CORROSION RESISTANCE"—and always remember that POWELL Engineering is ready at all times to help you select the correct valves for your individual requirements.

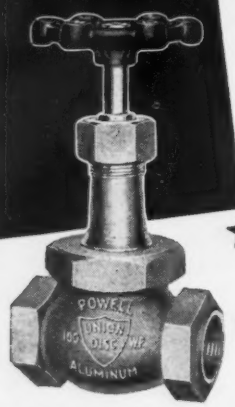


Fig. 1853 — Aluminum Globe Valve with screwed ends, union bonnet, and renewable vulcanized composition disc. Can be supplied with 18-8S stem.

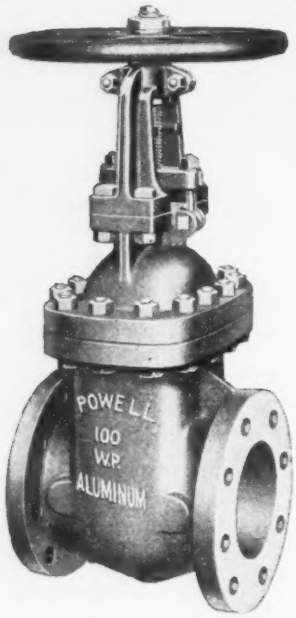


Fig. 2461—Large size Aluminum Gate Valve with flanged ends, bolted flanged bonnet, outside screw rising stem and taper wedge double disc. Can be supplied with 18-8S disc and stem.

Fig. 1859— Aluminum Gate Valve. Screwed ends, screwed-in bonnet, inside screw rising stem and taper wedge double disc. For more severe service, we recommend 18-8S disc and stem.

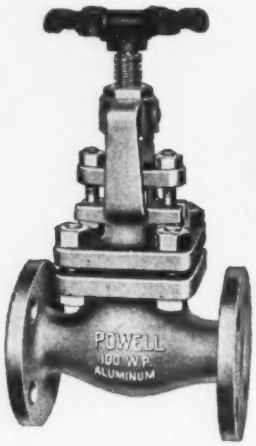


Fig. 1946 — Aluminum Gate Valve with flanged ends, bolted flanged bonnet, and outside screw rising stem. Taper wedge double disc in sizes 1" and larger. Also available with 18-8S disc and stem.

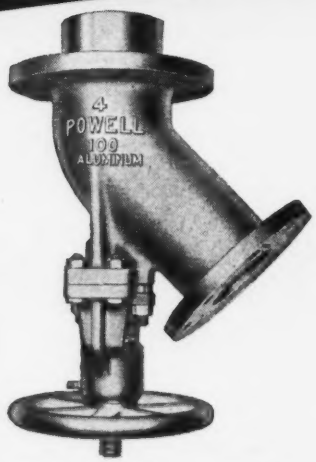


Fig. 2309A—Aluminum Flush Bottom Tank Valve for attaching to metal tanks and autoclaves. Also available with 18-8S disc, stem and seat plate. In this design the disc rises into the tank to open the valve.

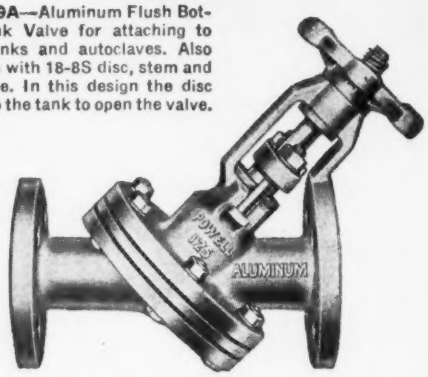


Fig. 1097A—Aluminum Separable Body Reversible Seat "Y" Valve. Also available with 18-8S disc, stem, lock nut, gland and seat plate. Lower half of the body can be unbolted and turned through an arc of 180 degrees to make a 90-degree angle valve, for special piping arrangement and to eliminate extra fittings.

*ALUMINUM VALVES are particularly well adapted for handling glacial acetic acid, acetic anhydride, ammonium hydroxide, concentrated nitric acid, hydrocarbons and distilled water. They also have a special application in food processing and dispensing, in the manufacture of naval stores, and in plants where non-sparking materials are required.

The Wm. Powell Co.

Dependable Valves Since 1846

Cincinnati 22, Ohio

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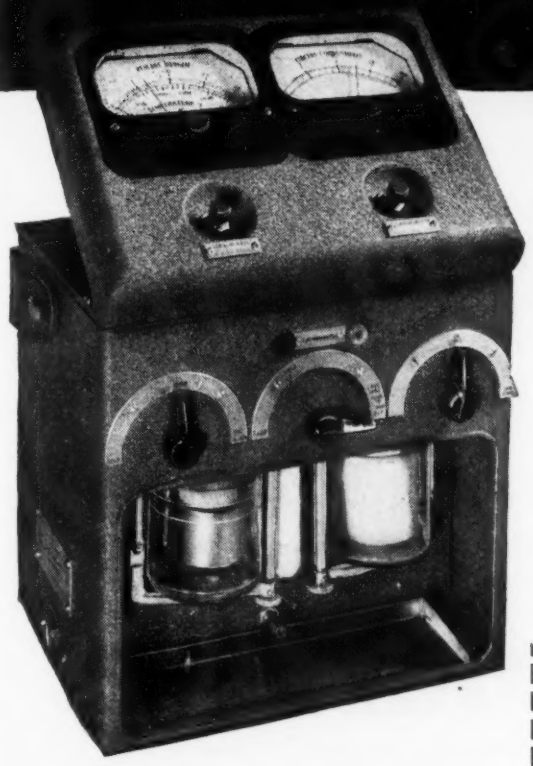
POWELL VALVES

How efficiently are you Burning Fuel?

YOU CAN FIND OUT—IN JUST A FEW MINUTES—WITH THE CITIES SERVICE INDUSTRIAL HEAT PROVER



This unique instrument indicates simultaneously the percentage of unburned fuel, or oxygen present in the flue gases.

With this data the Cities Service engineer can show you at once how to *save* on fuel costs.

The Industrial Heat Prover has been applied with uniformly successful results to every kind of fuel and to every type of combustion equipment in this country.

Also used successfully for controlling furnace atmospheres in the heat treatment of steel.

For a demonstration of the Industrial Heat Prover on your own equipment, contact your nearest Cities Service office or mail the coupon below.

MAIL THIS COUPON TODAY

(Available only in Cities Service Marketing Territories East of the Rockies)

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Room 456, 70 Pine Street
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Gentlemen: Please send me further information on the Cities Service Industrial Heat Prover—at no obligation to me.

Name .....
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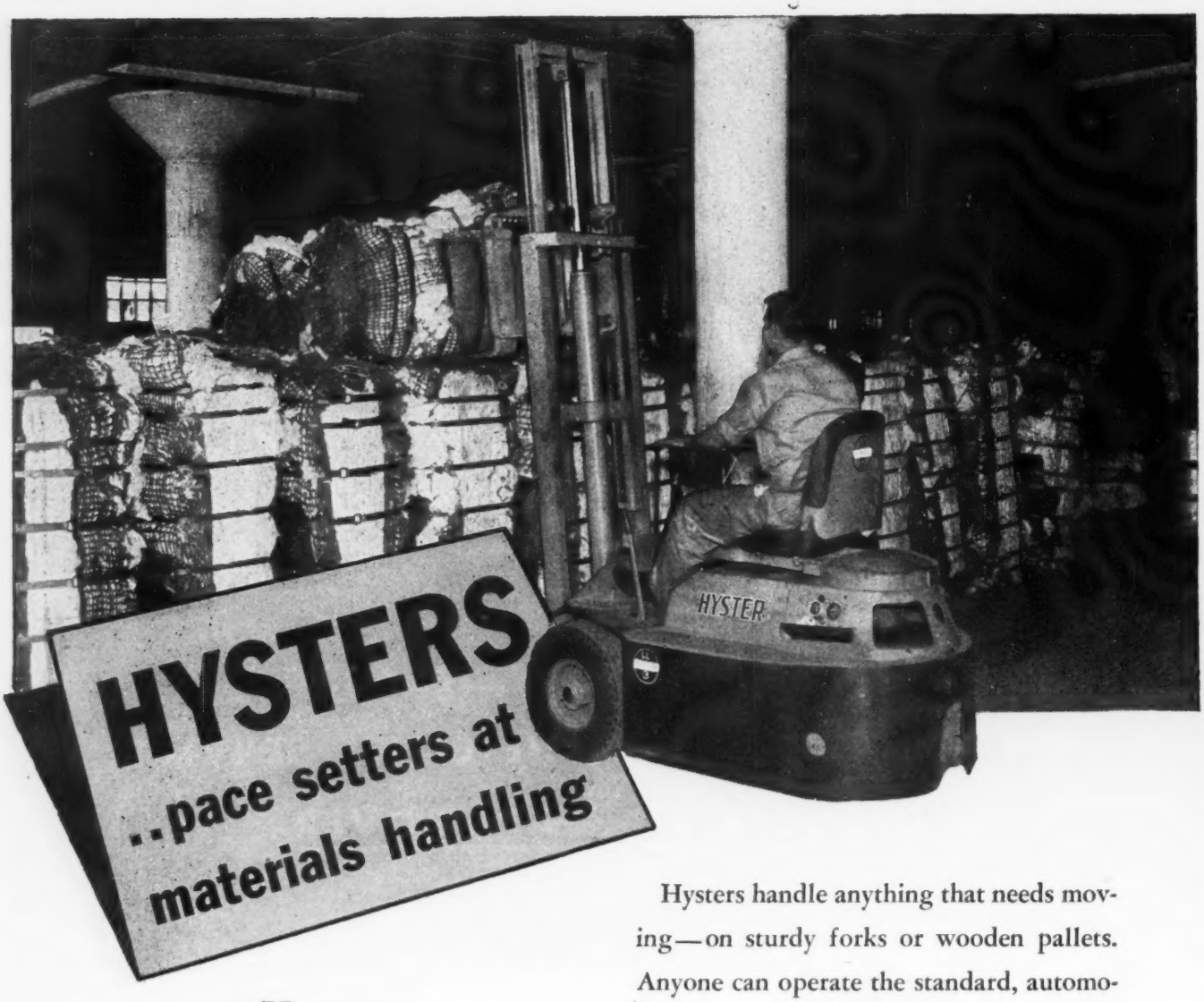

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..pace setters at materials handling

HYSTER Fork Trucks are fast. Whether lifting loads up to 2000 pounds; transporting them over rough surface or smooth; up ramp inclines or down; tiering high in storage, or unloading to platform or directly into trucks and box cars—the Hyster "20" does the job on the double-quick. Snap, sureness and precision is in their every movement.

Hysters handle anything that needs moving—on sturdy forks or wooden pallets. Anyone can operate the standard, automotive controls. Pneumatic tires save warehouse floors, protect the load, make for easy riding, give positive traction anywhere.

Among Hyster's complete line, carrying capacities range from 2,000 to 15,000 lbs. For details about these modern, pace setter Hysters, for textile plants and warehouses, write us indicating your materials handling needs. Catalogs available on all models.

HYSTER
FOR ANY LIFT OR PULL

HYSTER COMPANY

Pioneer manufacturers of mobile materials handling machines: Fork Lift Trucks, Crane Trucks, Straddle Trucks. All gasoline powered; all pneumatic tire mounted.

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BRANCH OFFICES: 221 N. LaSalle St., Chicago 1, Ill..; 90 West St., New York 6, N.Y.; 1022 Denrike Bldg., Washington 5, D.C.; 233 Ninth St., San Francisco 3, Calif.; Masonic Bldg., New Orleans 12, La.; 2219 Fourth Ave., Seattle 1, Wash.; 2700 Santa Fe Ave., Los Angeles 11, Calif.; 215 Euclid Ave., Cleveland 14, Ohio; 211 Farnsworth Bldg., Memphis 3, Tenn.

The efficiency of your plant cannot be judged by how *little* compressed air it uses each shift. What really counts is how *much* it uses, because every cubic foot of compressed air, properly applied, will increase your output and lower your costs. You need enough to do the jobs that can be done *only* by compressed air, and to do all of the other jobs that can be done *better*, *faster*, and *cheaper* by compressed air than by any other form of power.

You can save money, too, by selecting and installing the most economical compressors. For air power at pressures from 80 to 110 pounds per square inch, Ingersoll-Rand builds hundreds of types and sizes ranging from 1 to 15000 cubic feet per minute. These require from ½ to 3000 horsepower, and are driven by electric-motor, steam-, oil- or gas-engines.

No matter how many cubic feet you need, an Ingersoll-Rand Service Engineer can probably help you improve your present plant, and help select the best machines for any additional capacity that you may need.

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

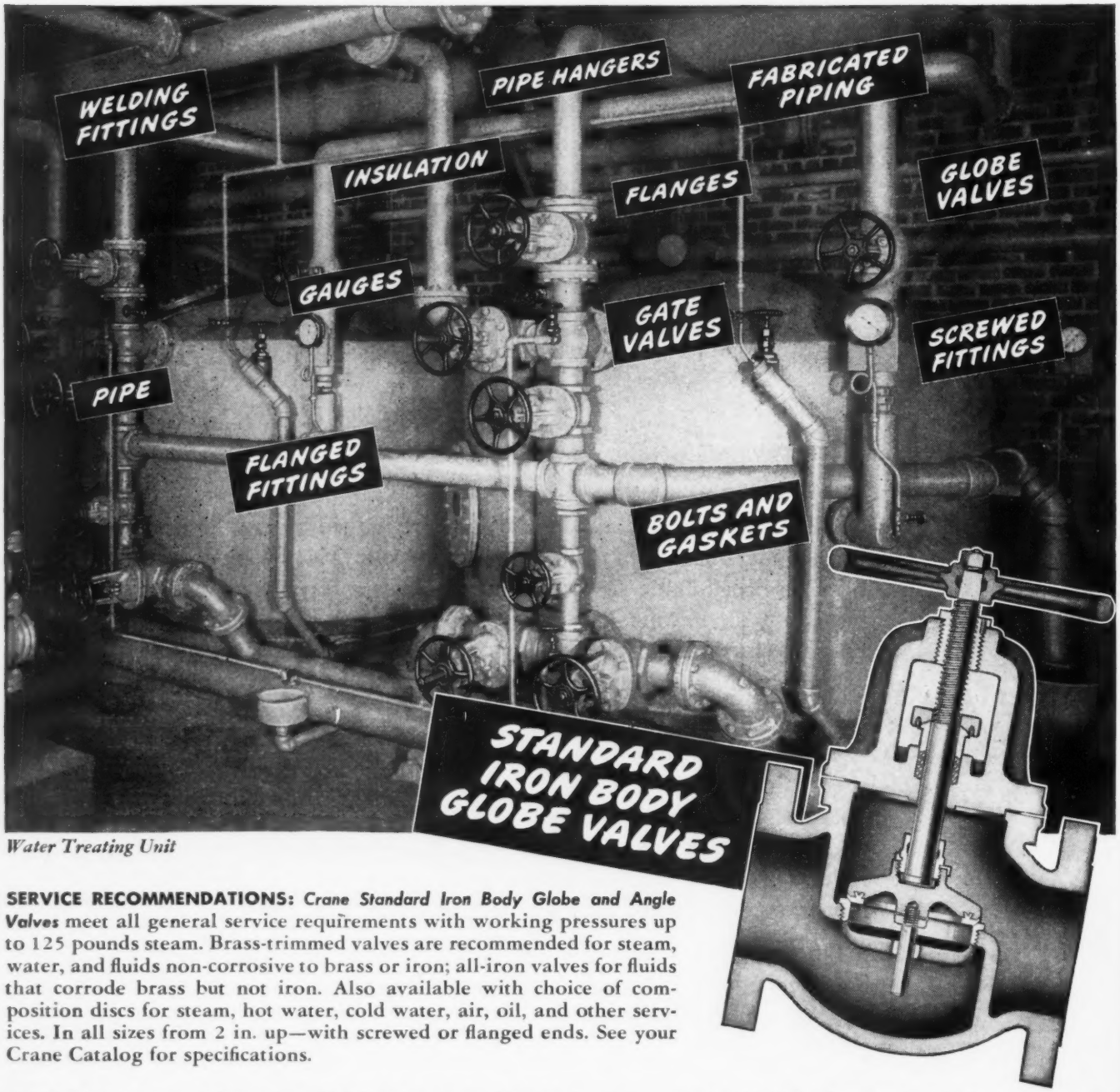
1-578

COMPRESSORS AND AIR TOOLS BUILT AND APPLIED BY THE MEN WHO KNOW AIR POWER

For Piping Equipment . . . Any Kind . . . it Pays to Rely on CRANE

ONE SOURCE OF SUPPLY • ONE RESPONSIBILITY • ONE STANDARD OF QUALITY

Rebuilding piping systems . . . and keeping them at peak efficiency . . . is made a lot easier by using Crane *complete* piping materials service. One order—to your Crane Branch or Wholesaler—can cover *all* your valves, fittings, pipe, piping accessories and fabricated assemblies. You can choose from the world's greatest line of brass, iron, and steel equipment. One standard of quality in all materials—and one responsibility behind them—helps insure getting the best installation. At the same time, you get the benefit of Crane Co.'s 90-year experience. Below is an example of how one typical valve in the Crane line is applicable to many of your needs.



Water Treating Unit

SERVICE RECOMMENDATIONS: ***Crane Standard Iron Body Globe and Angle Valves*** meet all general service requirements with working pressures up to 125 pounds steam. Brass-trimmed valves are recommended for steam, water, and fluids non-corrosive to brass or iron; all-iron valves for fluids that corrode brass but not iron. Also available with choice of composition discs for steam, hot water, cold water, air, oil, and other services. In all sizes from 2 in. up—with screwed or flanged ends. See your Crane Catalog for specifications.

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas*

CRANE

90 YEARS OF PROGRESS 1855 1945

VALVES • FITTINGS • PIPE

PLUMBING • HEATING • PUMPS

Prevent kier stains and resists with QUADRAFOS — *the versatile polyphosphate*

- *More Uniform Boil-off*
- *Metallic Ions Sequestered*
- *Alkali Precipitates Eliminated*
- *Goods Better Prepared for Penetration by Bleach Liquor*

If the presence of iron, copper or other metals brought in with the water supply, picked up from the equipment, or carried over with the goods, are causing staining and resist troubles—

If your kier boiling assistants are leaving lime soap deposits—

If hard water is forming insoluble cotton pectates—

Use QUADRAFOS in both open and pressure boils to get stain-free, resist-free kiering. QUADRAFOS (Sodium Tetraphosphate—$Na_6P_4O_{13}$) increases efficiency by acting as a peptizer to the other ingredients of the kier charge—produces better bottoms which yield to a more thorough bleach.

Dissolved in the make-up tank before addition of the alkali or other ingredients of the kier charge, QUADRAFOS sequesters the hardness in a tight soluble complex which thereby prevents deposition of stain-forming materials on the goods.

This is only one of the many ways the textile industry is helped by QUADRAFOS—the versatile polyphosphate. For other applications, details and samples, write Rumford.

AVAILABLE NOW!

QUADRAFOS Granular—a white, free-flowing powder . . . dissol³es readily in hot or cold water and may be added direct to the processing operation.

QUADRAFOS Beads—recommended for preparation of stock solutions. Easily scooped or poured from bulk containers. Also available in handy cotton dissolver bags.

TECHNICAL SERVICE

The Rumford Technical Service Department is ready to supply detailed information on the efficient application of QUADRAFOS to kier boiling, bleaching, dyeing, sizing, scouring and many other processes.

Write Rumford Chemical Works, Technical Service Department, 11 Newman Avenue, Rumford 16, Rhode Island.

QUADRAFOS*

Manufacturers

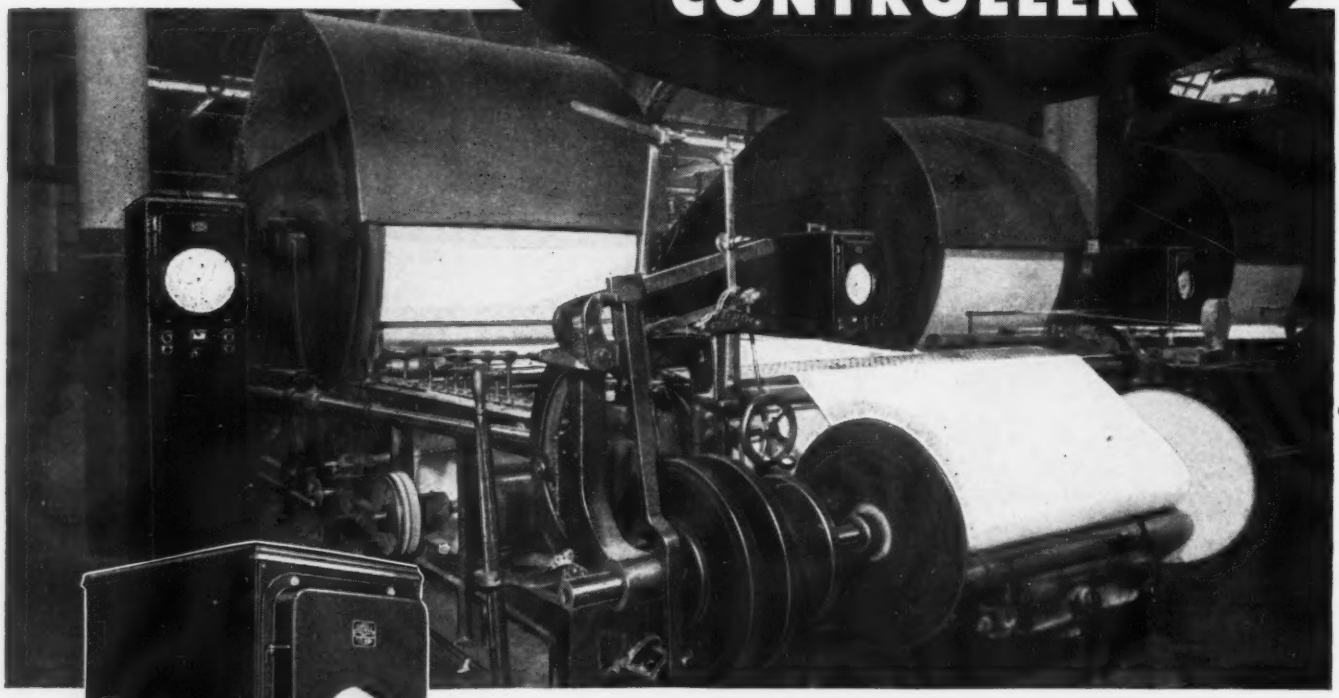
*REG. U. S. PAT. OFF.

RUMFORD CHEMICAL WORKS

11 NEWMAN AVE., RUMFORD 16, RHODE ISLAND

AUTOMATIC ELECTRONIC CONTROL OF SLASHER... INCREASES PRODUCTION WITHOUT SACRIFICE OF WARP QUALITY . . . . . .

BARBER-COLMAN MOISTURE CONTENT CONTROLLER



TRUE PROPORTIONING CONTROL MAKES NECESSARY SPEED CHANGES QUICKLY *and* ACCURATELY

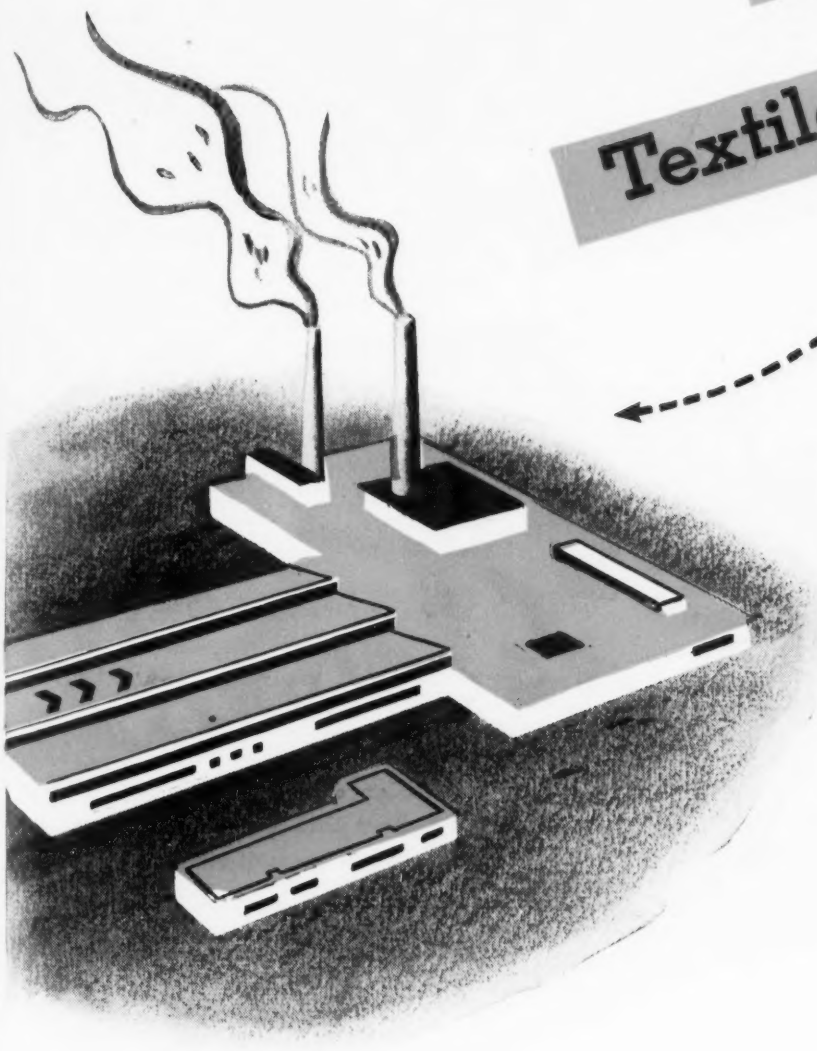
In governing slasher speed to obtain uniform moisture content of yarn or the loom beam, it is important that any speed changes be made as quickly and completely as possible. Barber-Colman Moisture Content Control equipment has the advantage of providing true *proportioning* control. When a small correction is needed, only a small change of speed will be made; when a large correction is called for, a large change of speed will be made — but always in a rapid, complete, and *stepless* operation without over-correction or "hunting" Automatic *electronic* Moisture Content Control equipment allows slasher production to be maintained at peak levels, yet the moisture content of the warp is held uniformly at the precise value necessary to provide quality yarn. *Investigate the possibilities for your mills now,* write *for* bulletin F1705-1.

Barber-Colman Company

45 YEARS EXPERIENCE SERVING TEXTILE MILLS

ROCKFORD ILLINOIS · BOSTON MASSACHUSETTS · GREENVILLE SOUTH CAROLINA · GREENSBORO NORTH CAROLINA · ATLANTA GEORGIA

Magnesium...Speed and the Textile Industry



New, higher speed machinery will be needed to step up the pace of production . . . to meet the public demand for goods. Faster running textile equipment calls for newly designed, light, high precision, durable parts. It is to the designers and builders of machinery, who think in terms of light weight and strength, that the textile industry must look to solve its problems of faster production.

To manufacturers of mill equipment we point to Mazlo Magnesium as the metal best suited to parts that must be light in weight, strong, durable, and dependable.

If your design calls for magnesium castings, forgings, extruded shapes or sheet, call on American Magnesium. Our engineers will gladly assist you.

ALUMINUM COMPANY OF AMERICA, Sales Agent for American Magnesium Products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

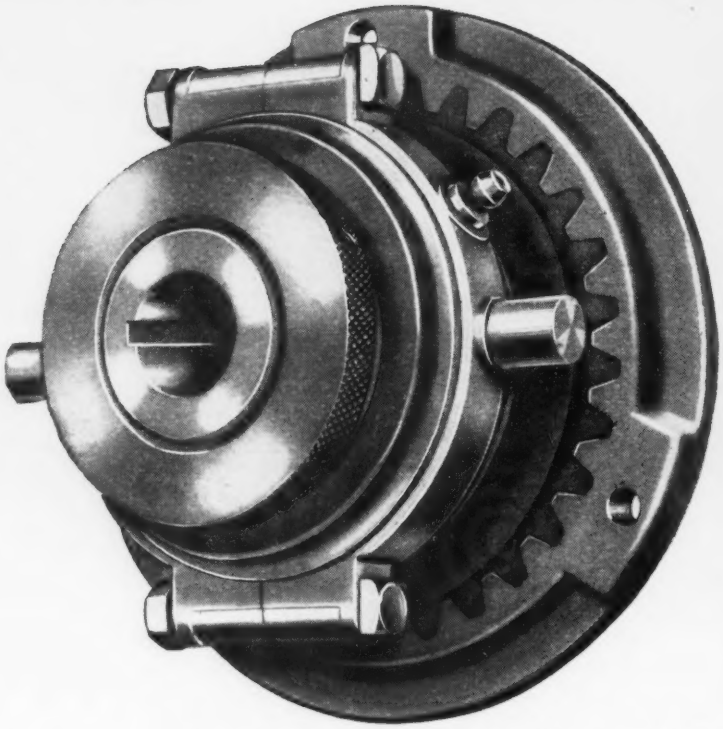
AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

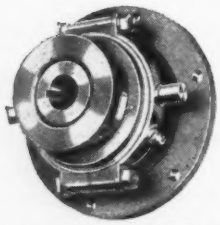
ROLLING GRIP

A GREAT NEW DEVELOPMENT IN FRICTION CLUTCHES

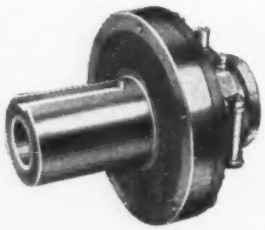
No Toggles! In the Dodge Rolling Grip Clutch, power transmitting pressure is developed by a circle of hardened steel balls. These are forced into a wedge-shaped groove by the sliding cam. The cam and groove contours utilize the basic mechanical principle of the wedge to multiply the force exerted on the shifter collar into a much greater force on the friction disc.



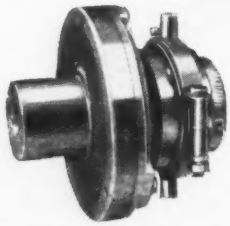
Dodge Rolling Grip Friction Clutch Gear Tooth Mechanism



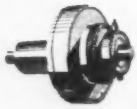
Dodge Rolling Grip Friction Clutch Bolted Plate Mechansim



Dodge Rolling Grip Friction Clutch With Sleeve



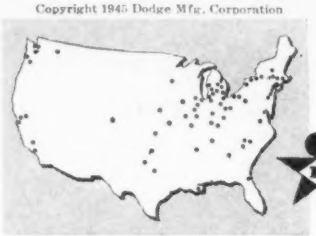
Dodge Rolling Grip Friction Clutch Cut-off Coupling



Another achievement of Dodge Transmissioneering—designed to give outstanding flexibility and ease of control to light machinery, without any sacrifice of positive drive—and available at low cost!

The Dodge Rolling Grip Clutch is especially adapted to bread wrapping, sewing, floor scrubbing, bag making, tobacco, textile, and other such machines. It is rugged, compact, easy to adjust. And it is available from Dodge distributors' stock. Call the Dodge Transmissioneer in your territory for information about this and other new developments in power transmission equipment.

Copyright 1945 Dodge Mfg. Corporation



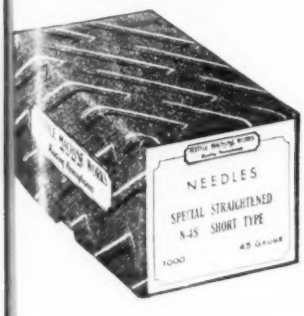
There are 257 Dodge factory graduate Transmissioneers, located in principal cities, to show you new and better ways of transmitting power.

Sign of the Dodge Transmissioneer

DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA, U. S. A.

DODGE
MISHAWAKA

TRANSMISSIONEERED MEANS ADVANCED DESIGN IN POWER DRIVES



Ball Room Glamour . . . Flawless, even-textured stockings lend glamour to ball room romance. Every full-fashioned stocking manufacturer knows that profits come only from needles that produce clearest fabrics. Keep your Knitting Machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF
TEXTILE MACHINE WORKS
Bur. of Ord. Flag and Navy "E"
July 25, 1941
One Star All-Navy "E" Burgee
January 25, 1942
Two Star Army-Navy "E"
July 25, 1942
Three Star Army-Navy "E"
January 25, 1943
Four Star Army-Navy "E"
January 11, 1944
Five Star Army-Navy "E"
July 9, 1945

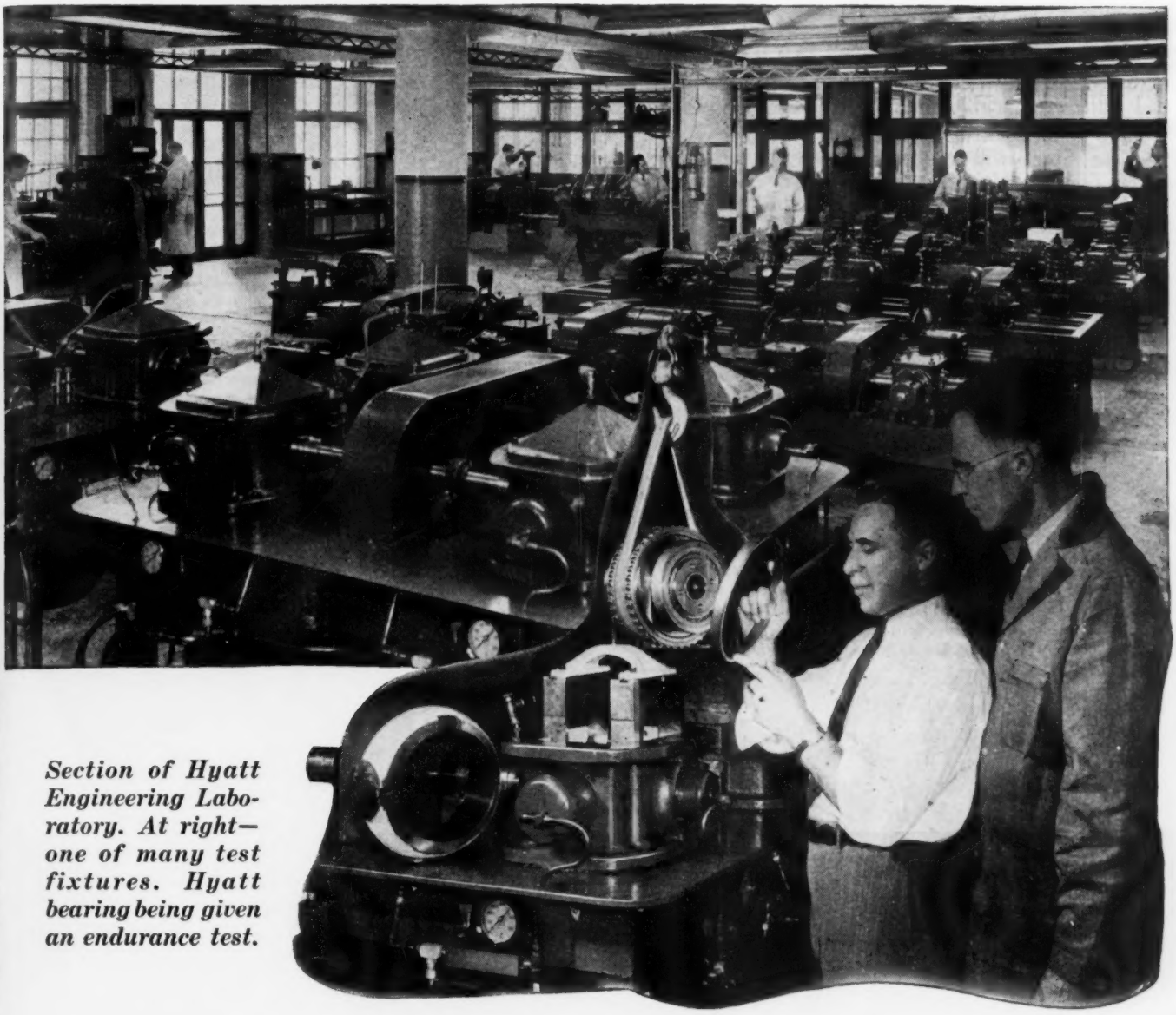
"To know how to wait is the greatest secret of success."

DeMAISTRE

Within the limits of material and manpower now available we are working on production of new high-precision READING Machines, designed to develop a new-high standard of quality and quantity production in the knitting of Full-Fashioned Stockings . . . Until such time as we can deliver these new machines to you, we will do our utmost to help you keep your present equipment at highest efficiency.

TEXTILE MACHINE WORKS • READING, PA.

There may be a Diesel locomotive... a power shovel or a loom in this room



Section of Hyatt Engineering Laboratory. At right—one of many test fixtures. Hyatt bearing being given an endurance test.

EACH DIFFERENT TYPE of application makes its own special demands of Hyatt Roller Bearings—with such destructive forces as speed, impact, radial or thrust loads, and others—as well as conditions of moisture, wetness, heat, cold, dust, dirt.

It is traditional to build Hyatts with endurance to outlast the equipment for which they are designed. Our way of making sure of their capacity to do so is to simulate the conditions of the job—whether it's that of a massive locomotive journal box or a feather-weight, high-speed spindle on a textile loom—in our 24-hour-a-day testing laboratory.

Here, dozens of individual tests go on all the time—even to running bearings to destruction to prove their correctness of design.

Any bearing, in any stage of production may be picked for these tests by Hyatt's roving test engineers. This random selection is added assurance to the Hyatt Roller Bearing user that both workmanship and metallurgical standards are adhered to throughout the entire manufacturing process.

Hyatt engineers gladly consult with you on the selection of the proper Hyatt Roller Bearings for your product. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

NEWS YOU'VE BEEN WAITING FOR...

"Stainless Steel has been released for civilian use"

MAKERS and users of textile equipment who have been handicapped by the wartime restrictions on stainless steel will welcome this announcement.

While it does not mean that U·S·S Stainless Steel will be immediately available in unlimited quantities—military needs still having preference—it does assure that more and more U·S·S Stainless Steel will be increasingly forthcoming.

So, if you have been planning to give your bleaching, dyeing and finishing equipment the practical, money-saving advantages that only stainless offers, order it now and make it a point to specify U·S·S Stainless Steel.

For U·S·S Stainless Steel is a *perfected*, time-tested product. There's no better stainless made. Wherever used it helps to increase output, to lower costs and to keep quality uniformly high.

The high strength of U·S·S Stainless Steel, its superior resistance to corrosion, heat and pressure, its ability to withstand hard knocks and to look like new after years of severe, continuous use are inherent advantages that pay off big. No one knows this better than those fortunate owners of U·S·S Stainless equipment who have watched it consistently outperform less efficient materials during these years of stepped-up war production.

*As you face the problems of post-war competition your ability to produce a better product at a lower price will meet its keenest test. Put your equipment in the best competitive position by incorporating, where it will do the most good, the finest stainless steel produced — U·S·S Stainless Steel.

U·S·S STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

UNITED STATES STEEL

WHITE Ceilings and Walls

VICTOR'S CHOICE FOR "EASY SEEING AND ACCURATE WORKMANSHIP"

VICTOR ADDING MACHINE CO.

TELEPHONE KEYSTONE 6210

GENERAL OFFICES AND FACTORY
3900 N. ROCKWELL ST.
Chicago 18, Ill.

August 13, 1945

U. S. Gutta Percha Paint Company
Providence, Rhode Island

Gentlemen:

Being engaged in a highly specialized kind of assembly work - manufacture of the "Norden Bombsight" - we naturally had to have the walls as well as ceilings of our assembly room painted with high reflectivity paint to assure maximum efficiency of our lighting system for easy seeing and accurate workmanship.

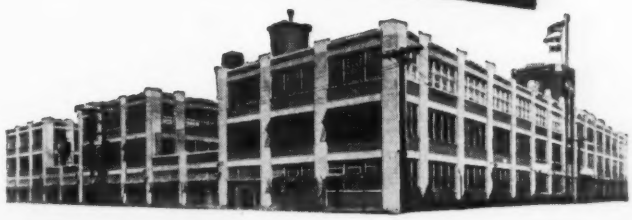
In our quest for the best white paint for this purpose, your "Barreled Sunlight" was brought to our attention. We are happy to say that it has far surpassed our expectations.

We have used "Barreled Sunlight" on our plant walls and ceilings and are pleased to report that after three years it still retains its whiteness and that after two washings it is still in good condition. We wish to thank you for your assistance in helping us reach our aim of Light and Cleanliness.

ROCKWELL PLANT

Very truly yours,
VICTOR ADDING MACHINE CO.
R. F. Bartlett
Plant Engineer

RFB:LB



When Victor Adding Machine Company converted to war work, a plant engineering department was created to raise plant facilities to utmost efficiency. Under their Plant Engineer, this department surveyed all factors bearing on production, including a survey of lighting for easier seeing and accurate workmanship.

It was natural that the services of professional lighting engineers were engaged to make this lighting survey. Natural, too, that to back up their new lighting system and distribute the light evenly throughout the working area all ceilings and walls were given a fresh coat of WHITE paint. We are very proud of the above letter in which Mr. Bartlett expresses Victor's satisfaction with the serviceability and high reflectivity of BARRELED SUNLIGHT whites.

No matter what type of lighting you employ, your lighting engineer will tell you that WHITE ceilings and walls will help you get the most out of it in creating good seeing conditions. For further data on the importance of light and paint to plant efficiency, send for a free copy of "Color for Industry" TODAY.

DATE .....

U. S. GUTTA PERCHA PAINT CO.
20-J Dudley St., Providence, R. I.

Please send us, without charge or obligation, a copy of your 16 page illustrated booklet entitled "Color for Industry."

COMPANY .....

STREET AND NUMBER .....

CITY ..... STATE .....

ATTENTION .....

TITLE .....

BARRELED SUNLIGHT

SPECIALISTS FOR NEARLY FIFTY YEARS

IN MAINTENANCE PAINTS FOR INDUSTRY

"With GULF QUALITY LUBRICANTS

we keep oily cuts and maintenance costs at an absolute minimum"

says this Overseer of Weaving

Actual photo of Overseer of weaving (left) consulting with a Gulf Service Engineer on the lubrication of Jacquard looms.

"GULF QUALITY LUBRICANTS provide full protection to cams and bearings under severe shock-load conditions, and help us keep oily cuts and maintenance costs at an absolute minimum," says this Overseer. "With Gulf oils and greases we've enjoyed low maintenance expense for over 20 years."

When you are planning ways and means to increase production and lower costs during the critical months ahead, ask yourself this important question: "Are we getting the many benefits of scientific lubrication?"

Call in a Gulf Service Engineer today and ask him to work with your operating men to install the kind of lubrication practice that insures greater efficiency, fewer seconds, lower maintenance costs, and less fire hazard.

Then for continuous year-round benefits in your mill, keep the Gulf Lubrication Service Engineer "in the picture."

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

CLUTCH USERS...

HERE'S THE MAXITORQ *in detail*

NO TOOLS NEEDED FOR ASSEMBLY • ADJUSTMENT OR TAKE-APART

This exploded view photograph shows ALL parts of a MAXITORQ Floating Disc Single Clutch . . . in the correct order of assembly which is made BY HAND . . . and securely locked without the use of tools.

The patented Separator Springs (fourth part from top) are inserted between each disc so that they ride free in neutral. Thus there can be no drag, no abrasion, no heating. "In" and "out" are positive . . . disengagement is instantly made with light pressure.

We have made nothing but clutches for 50 years . . . good ones always . . . but the MAXITORQ has taken machine tool manufacturers by storm . . . has been enthusiastically received by makers of all sorts of special machinery . . . and is doing a wonderful job on countless machines and instruments. For fast power pick-up, smooth, quiet operation, easy adjustment to proper tension and long clutch life, specify MAXITORQ. Send for NEW Catalog No. 4510.

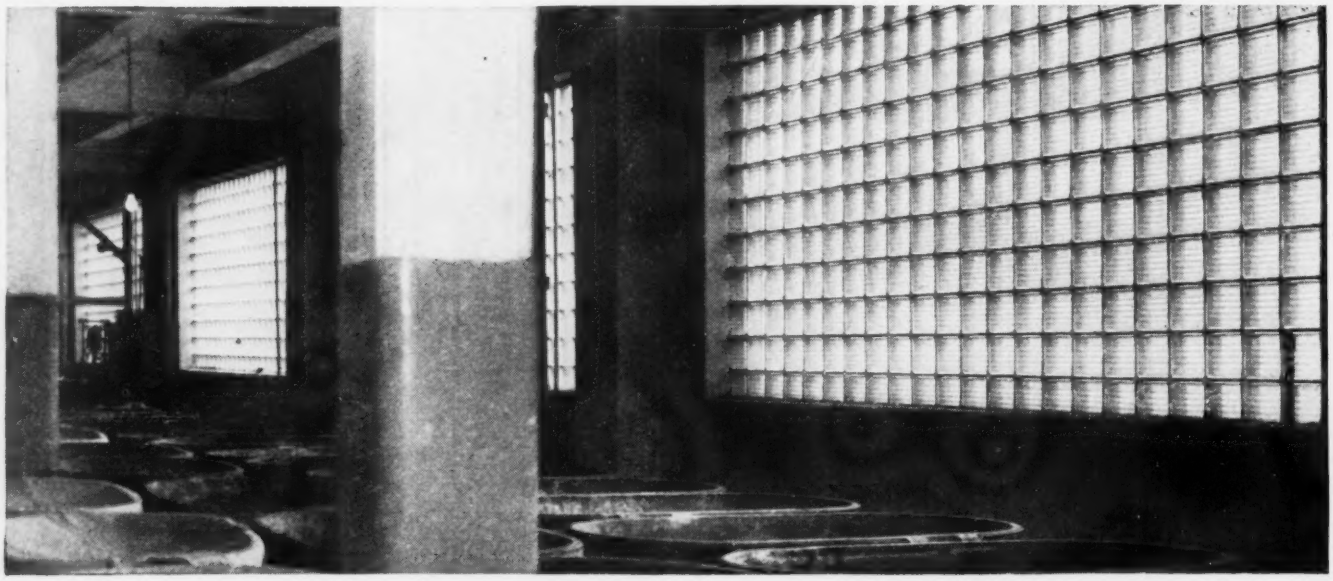
TYPES . . . CAPACITIES

Maxitorq clutches are made in Single and Double types, wet or dry. Pulley & Cut-off Coupling Types also available. Capacities from ¼ to 15 H.P. at 100 r.p.m.

Territories open to Established Manufacturer's Agents capable of developing power transmission installations. Full cooperation and leads.

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER, CONNECTICUT

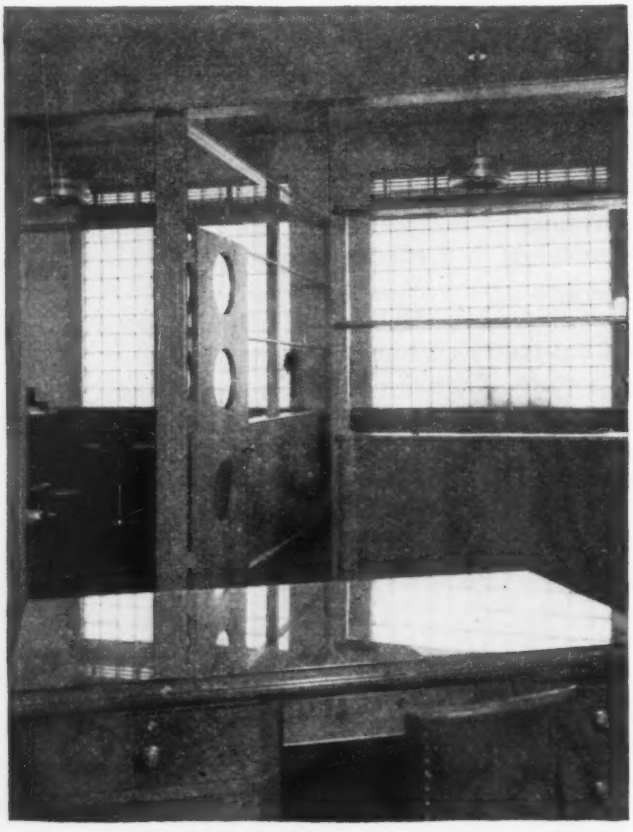
MEETING MODERN STANDARDS WITH *PC Glass Blocks*



IN DAMP, HUMID WORK ROOMS panels of PC Glass Blocks have proved superior to ordinary sash, which frequently rots, rusts, warps and needs repainting. They also help to maintain desired temperature and humidity levels, to lessen condensation.

• • •

LARGE OFFICES present an excellent opportunity for PC Glass Blocks to prove their practical advantages. An ample supply of diffused daylight is needed here, and PC Glass Block panels supply it, even to desks remote from lighting areas.



MOST people who are concerned with plant construction and modernization already know that PC Glass Blocks are attractive and practical. This will remind you of *all* the ways PC Glass Block construction serves and saves in new and modernized plants and offices.

PC Glass Blocks distribute generous floods of daylight over wide areas. Insulating properties lessen heat losses through lighting areas, help maintain temperature and humidity levels, ease the load of air-conditioning and heating equipment. Infiltration of chilling drafts, gritty dust, is prevented because PC Glass Blocks are an integral part of the wall. They exclude unpleasant sights, dampen disturbing sounds.

Glass surfaces are quickly and easily kept clean. PC Glass Blocks do not break readily, rarely if ever need repair or maintenance.

In planning new construction and modernization projects in offices, stores and factories, you can insure added beauty, comfort and economy by using PC Glass Blocks. Pittsburgh Corning Corporation, Room 771, 632 Duquesne Way, Pittsburgh 22, Pennsylvania.

· Also makers of PC Foamglas ·

PITTSBURGH PC CORNING

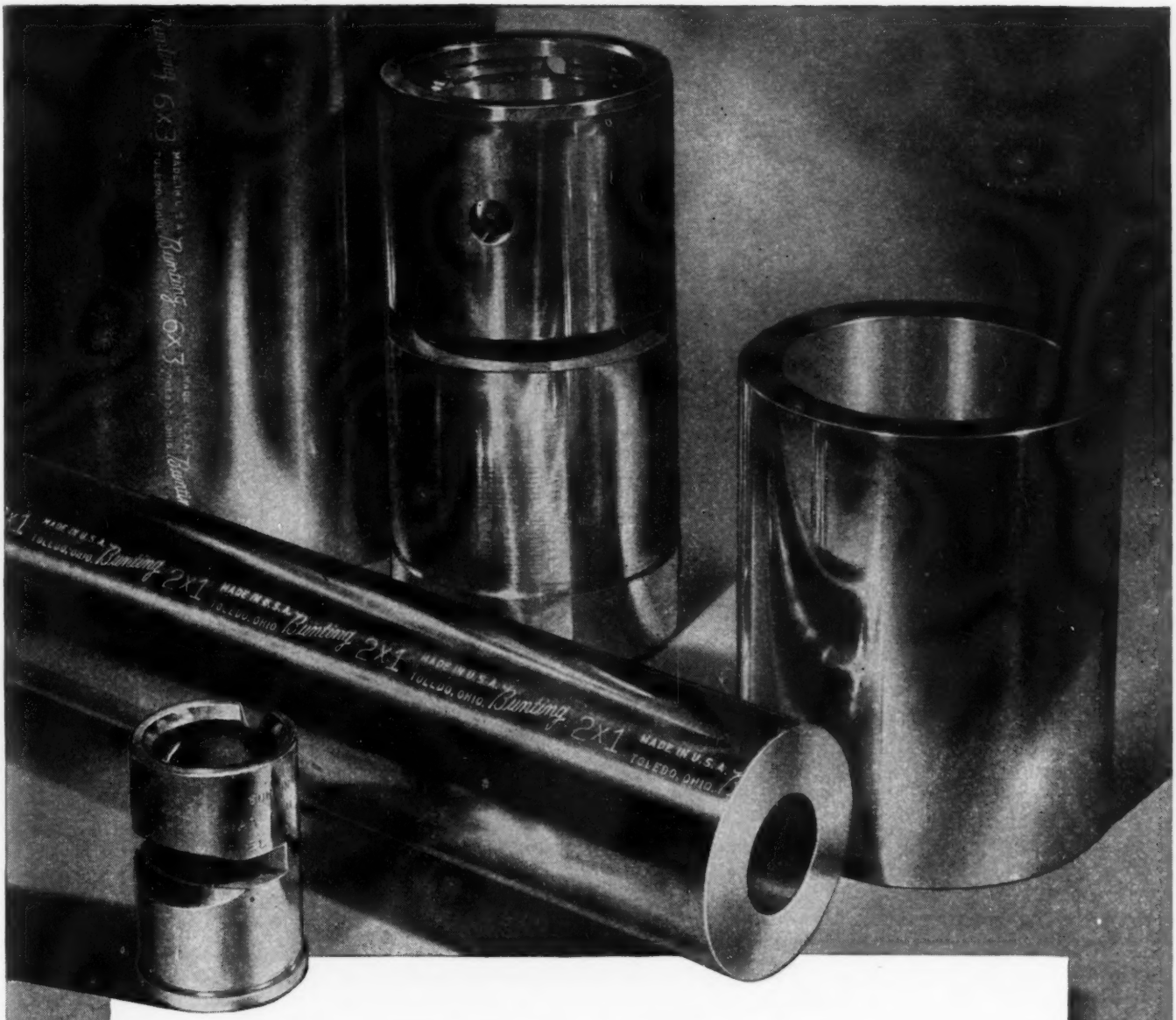
GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY, PITTSBURGH 22, PA.



The finest Standardized Bronze Bearings ever produced are now available for every production and maintenance requirement. Hundreds of Bunting Stock-Carrying Distributors serve industry from comprehensive stocks. Ask your Distributor for the Bunting Catalog. The Bunting Brass & Bronze Company, Toledo 9, Ohio.

27

Bunting

BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS

"A desizing enzyme that's stable at 180° ?
... I want to hear more about that!"

THE SERVICE THAT BUILT OUR BUSINESS CAN HELP YOURS

Our business has been built largely on the practical help we have been able to give our customers, right in their own plants, in adapting Rohm & Haas products to their needs.

Our representatives are men with technical training and practical experience in the use of industrial chemicals. Call on a member of our textile chemicals department when you need assistance in choosing or using . . .

Fine Chemicals For Fine Textiles

OVER the years mill men have found it pays to talk with our representatives.

Right now one of the things they're talking about is RHOZYME DX, new desizing enzyme that really holds up under heat.

With RHOZYME DX, enzyme activity is unaffected when solutions are held at 160° F. for as long as four hours.

In fact, for rapid processing in jigs and kettles, temperatures of 170° F. to 180° F. may be used with complete safety.

Let us know if you would be interested in a call from one of our men to tell you more about this history-making new desizing enzyme . . . . . **RHOZYME DX**

RHOZYME *is a trade-mark. Reg. U. S. Pat. Off.*

Represented in Canada by Rohm & Haas Company of Canada, Ltd., Toronto; and in South America by Cia. Rohm y Haas, S. R. L., Carlos Pellegrini 331, Buenos Aires, Argentina, and agents in principal South American cities.

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Manufacturers of Chemicals for the Textile, Leather and other Industries . . . Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes

LABOR *and* MANAGEMENT MEET — *for* PEACE *or* CIVIL WAR?

THE prospect of a knock-down and drag-out fight in the automobile industry does not augur well for the reconversion outlook, which upon every other score is bright. Any widespread outbreak of the type of industrial warfare which now threatens will disrupt, more thoroughly than anything else on the horizon, an orderly transition to a peacetime economy.

It is doubly unfortunate that there should be a general tightening of union and company battle lines upon the eve of the Labor-Management Conference, which on November 5th will convene at President Truman's direction for the purpose of "working out by agreement means to minimize labor disputes." If the current work stoppages occasioned by industrial conflicts should increase rather than diminish between now and November first, the Conference atmosphere hardly promises to be favorable to a dispassionate examination of basic issues.

Yet the shadow of the threatened industrial storm that hangs over the Conference only serves to emphasize the importance of reaching satisfactory agreement upon two problems with which such a Conference might deal. The first is that of determining what machinery shall be used for settling disputes upon which employers and workers have reached an impasse. The second, and more far-reaching, is that of arriving at some common understanding upon the major issues which commonly lead to irreconcilable disputes.

Settlement of Wartime Disputes by the War Labor Board

During the war the first problem was handled largely by machinery centered in the National War Labor Board. Supported by general adherence to patriotic pledges by labor leaders and employers not to resort to the use of economic force against each other during wartime, and backed up on rare occasion by use of the President's power to seize plants for war purposes when its orders were not obeyed, the Board managed, by what amounted to compulsory arbitration, to settle the nation's wartime labor disputes with relatively little economic loss.

But it can scarcely be claimed that the War Labor Board did much to resolve the issues from which disputes grow. Indeed, the fact that it was available to issue orders in cases which the Secretary of Labor certified as likely to "lead to substantial interference with the war effort", resulted in the conversion into full fledged disputes of many disagreements which would otherwise have been settled at a local level in the course of collective bargaining. Meanwhile, local collective bargaining machinery which should have been doing most of this work was neglected, and will need thorough reconditioning even to be brought back to its prewar level of effectiveness.

With V-J Day came an abrupt change in the status of the War Labor Board. One of its main props, labor's "no strike pledge", was promptly withdrawn. It could no longer rely on the President to use his power to seize plants for war purposes to force obedience to its orders. Consequently the Board agreed that it would accept new cases only if both parties to the dispute stipulated in advance that they would abide by the Board's findings, that it would clear its dockets of old cases as rapidly as possible, and that it would then go out of business, leaving to the Labor-Management Conference the question of what should take its place in the postwar period.

What Shall Take the War Labor Board's Place?

The immediate and pressing task of the Labor-Management Conference is to agree upon machinery for settling industrial disputes in the peacetime economy.

Neither management nor labor wants the continuation of compulsory arbitration to which they submitted as a necessary war measure. But it must be clear to everyone that if any substantial proportion of the disputes that inevitably arise are settled by resort to strikes and lockouts, economic anarchy will result. Not only will it be impossible to achieve the high levels of output and employment that have been set as postwar goals, but it is questionable whether our economy could survive. The only alternative to compulsory arbitration under government auspices is for management and labor to demonstrate their ability to effect a peaceable resolution of their differences without it.

The most obvious need is to set up local machinery at the grass roots where disputes originate. That is where most of them should be settled by local negotiation and, when that fails, through voluntary submission to mediation or arbitration under terms of reference to which the parties agree. Many issues, which at plant level are relatively simple in character, are blown up to formidable dimension and complexity when they are passed along

the line for decision in Washington. The centralizing process is one that frightens everyone connected with it because it focuses attention upon the possible importance of precedents established by a decision, rather than upon resolving satisfactorily the particular dispute at hand.

Unquestionably, some Federal machinery must be provided which may be called upon in cases where the size or implications of a threatened dispute clearly run beyond local jurisdiction. That will mean the thorough revamping of conciliation and mediation machinery which exists, but which has grown rusty through disuse while compulsory arbitration was the order of the day.

At least, this involves a complete overhauling of the United States Conciliation Service with a noteworthy strengthening of its personnel. There may be wisdom also in recently advanced suggestions for the creation of a board of arbitration to act in cases voluntarily submitted by the parties concerned, and for boards of inquiry to make reports upon the merits of disputes in which the public interest is concerned. But there is valid ground for questioning what appears to be the common assumption that such machinery should be located in the Department of Labor. It belongs neither there nor in the Department of Commerce. For the work which such agencies are called upon to perform, both the appearance and fact of complete impartiality are essential to effective performance. Assurance of impartiality will not be fostered by placing them in a department specifically charged by Congress with the task of advancing the interests of wage workers.

Resolving the Issues Over Which Disputes Arise

It may be, as many think, that the forthcoming Labor-Management Conference cannot effectively handle any problems beyond the procedural ones suggested above. If that is true, its agenda probably should be restricted to planning the reconstitution of collective-bargaining and dispute-settlement machinery, in view of the urgent need for putting it in working order.

But either in this Conference, or in subsequent ones, there will have to be an attempt to reach a reasonable measure of labor-management accord upon certain basic issues over which most industrial disputes originate. The best of machinery can be swamped if disputes are generated in ever-increasing number.

Most important of such issues is that of the fair determination of wages. There is clear need for reaching agreements at least upon the major factors on which such determination should rest. It seems evident that if we are ever to hope to reach the high levels set and generally accepted as postwar goals, we must harness economic incentives to promote production efficiency. That means that workers, as well as management, must be given a genuine stake in increased productivity. No universal formula is possible, but we should be able to agree upon general principles for dividing returns derived from improved performance in output between workers and investors, and consumers in the form of lowered prices.

Again, since unionism is here to stay, general acceptance by management of the principle of collective bargaining would save innumerable disputes which are concerned more with the method of negotiation than with the concession sought. Few in management still question the validity of the collective bargaining process as such, but there are many matters to be resolved of which the question of the open shop, the union shop, or the closed shop is merely a conspicuous example, upon which there is wide divergence of conviction between and within labor and management groups.

On the management side, there is sincere concern about the intent or ability of union leaders to exercise responsible control that assures compliance with contractual obligations. Wild-cat strikes are of sufficiently frequent occurrence to give substance to this distrust, and union discipline seldom has been administered in a decisive or effective fashion. The prospective rivalry of three competing labor organizations of national scope gives management little confidence that a bargain made and kept in good faith with any one of them provides assurance against work stoppages.

All of these matters, and many others, need thrashing out between management and labor, with the view of arriving at as large a measure of specific and detailed agreement as can be achieved. The greater the area of such agreement, the smaller will be the area for disputes that must be handled by settlement machinery, or put to the final test of force.

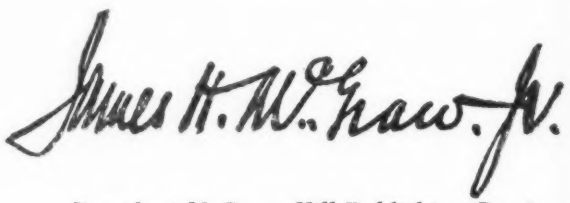
Peace or Civil War in Industry

The Labor-Management Conference is of major importance to national welfare. It is important even if it restricts its objectives to the procedural problem of how industrial disputes are to be handled.

It can make an even larger contribution if it lays the groundwork for an attempt to reach working agreements upon such policy issues as have been cited above.

Neither management nor labor can afford to lend anything less than their best intelligence and effort to an attempt to arrive at common understanding. Success will mean that we have a genuine chance of reaching new levels of economic well-being. Failure will mean industrial civil war, in which the casualties will be high. One almost certain casualty of such a war will be the principle of collective bargaining, since the Government can scarcely refrain from establishing compulsory arbitration if sufficient breakdown occurs.

It is to the vital interest of both management and labor to demonstrate that they can responsibly control themselves.



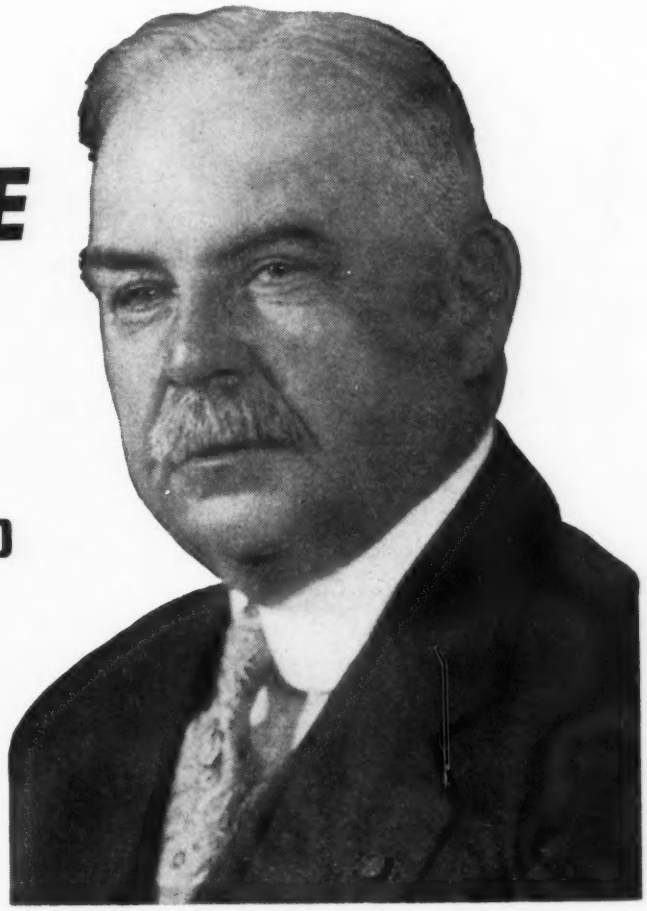
President McGraw-Hill Publishing Co., Inc.

THIS IS THE 40TH OF A SERIES

October, 1945 **TEXTILE WORLD** Volume 95, Number 10

FRANK NAGLE Retires

After 65 Years With TEXTILE WORLD



Captain Frank Lincoln Nagle, who relinquishes active work on Oct. 31, at the age of 85.

HIGHLIGHTS: *Rose from office boy in Philadelphia to publisher in Boston—Long an outstanding industry figure—Will divide future time between Massachusetts and Florida.*

By EDWIN D. FOWLE
Publisher and Editor, TEXTILE WORLD

HE THINKS that his younger associates are now familiar enough with the responsibilities of publishing to carry on without him. A touch of sciatica has crept into those hitherto sturdy legs which have carried his massive six-foot frame around these scores of years. The lure of Florida, where the winter climate has tickled his fancy during recent sojourns, is calling louder for more time. Captain Frank Lincoln Nagle has decided to retire from active work.

Many of you subscribers in the mills may not know this interesting TEXTILE WORLD personality, because the captain has largely confined his activities to the advertising responsibilities of this publication and its predecessors. This has been true from almost the time he left his native town of Pottsville, Pa., on Sept. 20, 1880, to take an office boy's job with the *Textile Record*, in Philadelphia. Advertising was his chief concern while he was partner in the firm of Lord & Nagle, in Boston; and it has occupied his primary attention even in recent years, when he has been chairman of the board of the Bragdon, Lord & Nagle Division of the McGraw-Hill Publishing Co., Inc.

AMONG HIS FRIENDS. Regardless of the state of your personal acquaintance with him, Captain Nagle numbers you among his many friends. This is the most natural thing in the world. It has been your faithful readership of this publication and its predecessors which has made his success possible. And there are more of you today than ever before in the paper's history.

You on your part owe something to Frank Nagle, as the income which he and his associates have brought in through the advertising pages has made possible our printing in these columns the information which you have found interesting and useful in your jobs.

I am not overstating things when I assure you that his capacity for friendliness is big enough to encompass all of you. The captain is widely known, respected, and loved for his ability to make and hold friends. From beneath that deceptively stern, gray, Pennsylvania-Dutch mustache come perpetually sympathetic words and encouragement for the depressed, considerate advice for those who need it, and always a sincere offer to be of help.

On top of other attributes is a charming buoyancy, salted by a trigger-quick repartee for those friends who give him evidence that they are in a jovial mood.

Friendliness is likely to be reciprocated, and therefore it is a great asset

(*Continued on page 186*)

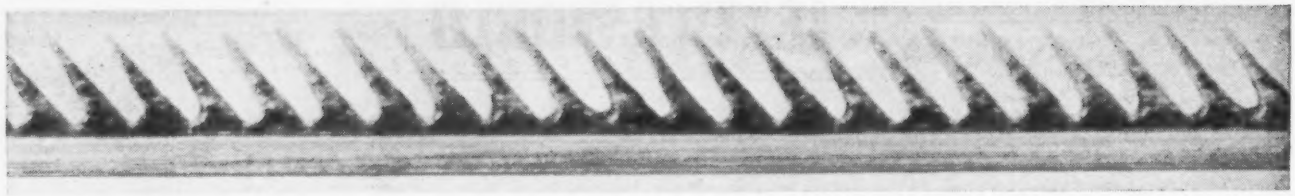


Fig. 1. This enlarged photograph shows a length of metallic card clothing which ran 24 hr. a day for a period of four years without grinding.

METALLIC CARD CLOTHING

Eliminates Grinding and Reduces Stripping Cycle

HIGHLIGHTS: *Labor cost of carding materially reduced at Columbus Mfg. Co. — Some of the first cards clothed have run 17 years without grinding — Cylinders and doffers are stripped once every two weeks — No loss in quality has resulted.*

By H. B. ROBINSON, *Superintendent, Columbus Mfg. Co.*

Fig. 2. The author inspects a card which has been running 17 years without grinding.

CARD GRINDING has been eliminated and the stripping cycle reduced to once every two weeks by the use of metallic card clothing at Columbus Mfg. Co., Columbus, Ga. Repeated tests over a period of years have shown that no loss in the quality of yarn and cloth has resulted from the use of the clothing.

Known as Platt's metallic wire, the clothing was originally patented by Platt Freres, Roubaix, France. Though it has been available in the United States for a number of years, the textile industry has been slow to change over from regular card clothing to the metallic wire.

The wire is similar to the saw-tooth wire used as clothing for lickerins, but it has finer teeth. In changing over a conventional cotton card from regular to metallic clothing, it is necessary to build up the circumference of the cylinder and doffer because the height of the metallic wire is not as great as the height of the regular clothing. This is done by winding on a base steel wire similar in appearance to the clothing used on worsted cards. The ends of the base wire are fastened by soldering, and the cylinder surface is ground down to provide a smooth bed for the clothing.

After the desired circumference of the cylinder has been attained with the base wire, the metallic clothing is wound on in a similar manner, soldered, and ground down to present a level surface for carding. The winding is done under a tension of 450 lb.

QUALITY NOT LOWERED. Four cards were equipped with the clothing in 1928 at Columbus Mfg. Co., and extensive tests were made on the stock processed by them in comparison with stock processed by regular card clothing. The results showed no appreciable difference in the quality of yarn made from cotton carded by the two kinds of clothing, and the mill equipped from 6 to 10 cards each year with the metallic wire until all of their 172 cards were so equipped.

The mill, normally producing industrial sheetings, continued to make tests at frequent intervals on yarns ranging from 20s warp to 39s filling. No significant variation in the quality of the goods was noted in any of these tests, although some of the cards had been running since 1928 and 1929 without grinding.

Card productions ranging from 7 to 16 lb. per hr., with cylinder speeds of 160 and 190 r.p.m., have been tested under manufacturing conditions shown in Table I. The test results shown in Table II, made with a card production of 11.33 lb. per hr., are the average of a number of tests and are representative of results obtained from testing at various ages of the card clothing.

CHOKES ACCUMULATE. The chief objection found to Platt's metallic wire

TABLE I

Stock used to test the metallic card clothing was processed under the conditions outlined below and tested under standard conditions of 65% relative humidity.

Cotton—1 in., S.L.M.	
Opening layout 6 hopper feeders Gyrator Vertical opener Lattice cleaner	
1-process pickers	
Cards 1910 model R.P.M. lickerin R.P.M. cylinder Front-plate top Front-plate bottom Oz. lap fed	 430 160 0.034 0.017 14
Gr. sliver delivered	58.25
Lb. per hr.	11.33
2-process drawing	
1-process roving	
Double-creel spinning	

TABLE II

The average results of a number of tests are given in the table below. Tests on 21s, 25s, and 31s warp and 39s filling yielded comparable results.

Card waste (percent) Motes and fly Strips Cylinder Doffer Flats Front fly	 1.286 None None 2.110 0.054
Total card waste	3.450
Neps (100 sq. in.)	61.4
Variation (avg. percent) Card sliver Breaker drawing Finisher drawing Roving weight	 9.46 21.07 22.54 4.75
Ends down per M spindle hr. (20s warp)	22.11
Avg. breaking strength (lb.)	96.5
Percent of Draper Standard	99.39
Yarn-appearance grade	B

Fig. 3. Bill Butts, first-shift card grinder, holds all the strips removed from the doffer and cylinder of a card after two weeks of continuous operation without stripping. The card was stripped with a roller.

is its tendency to cause chokes to accumulate between the ends of the doffer and cylinder and the housing of the card. This is caused, of course, by the fact that some of the short fibers, embedded in the clothing when using regular wire, are thrown off the cylinder and doffer as fly and are blown about underneath the card by the air draft. Instead of settling to the floor, as the longer fibers do, to be removed when the fly is pulled, some of the linter-type fibers adhere to an oil spot under the cylinder or doffer bearings and gradually accumulate other fibers to form a choke. These chokes must be removed manually.

The clothing is also subject to being smashed in the same manner that regular clothing is smashed or broken. When a severe smash occurs, it is necessary to remove the damaged portion of the clothing and wind on new wire. The new wire must be ground down level with the old wire. This constitutes the only occasion for grinding, other than at the time of installation.

The manufacturers of the metallic wire recommend stripping once a month, but at Columbus Mfg. Co. the cycle has been set at once every two weeks. The purpose of this stripping is chiefly to remove parts of seeds, leaf, and trash which have become embedded between the teeth of the clothing. The mill has found roller stripping best for this job.

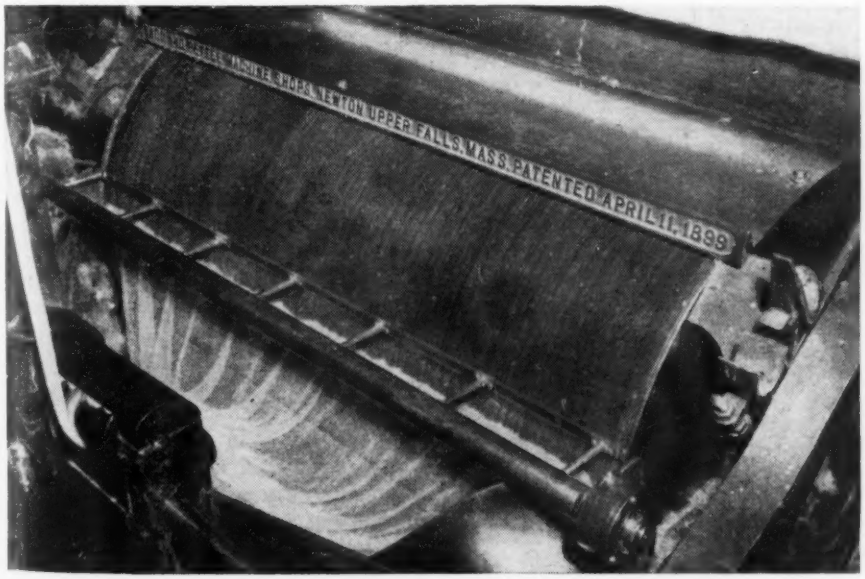


Fig. 4. Metallic card clothing is wound on the doffer and cylinder under a tension of 450 lb. and the ends are fastened by soldering.

TABLE III

Stock processed at a cylinder speed of 192 r.p.m., tested while this article was in preparation, showed the following results:

R.P.M. cylinder	192
Oz. lap fed	14.34
Lb. per hr.	12.50
Neps (100 sq. in.)	42
Variation (avg. percent) Breaker drawing Finisher drawing Roving weight Yarn number	 22.61 22.55 7.54 5.96
Ends down per M spindle hr. (20s warp)	22.66
Avg. breaking strength (lb.)	97.50
Percent of Draper Standard	104.05

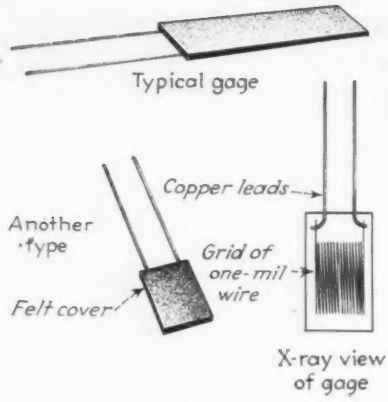


Fig. 1. *The strain gage consists of a small grid of one-mil-diameter wire supported by paper or plastic. When stretched or compressed, the wire changes its electrical resistance.*

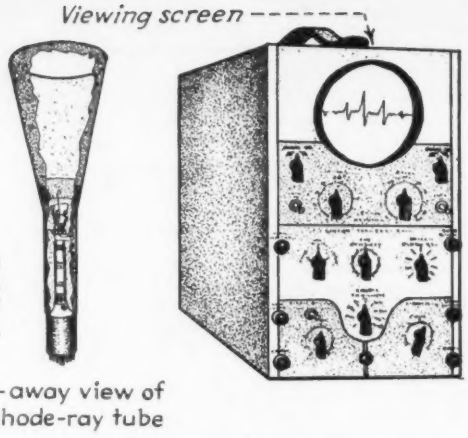


Fig. 2. *The oscillograph is an electronic instrument which makes visible a reproduction of the stresses as they are developed in loom operation. It contains 15 tubes.*

ELECTRIC STRAIN GAGE

Promises Solution to Textile Machine Problems

HIGHLIGHTS: *Application to looms should lead to better performance and longer machine life—Misplacement of lug strap 1 in. increases picking-shaft stress 17%—Misplacement of picking shoe 5/16 in. increases stress 11%—Faulty adjustment can increase crankshaft stresses 75%.*

By V. E. HILLMAN

Director of Research, Crompton & Knowles Loom Works

VIBRATORY MOTION is detrimental to the life of any machine. One of the cherished hopes of the progressive loom manufacturer is to learn more about reversed stresses incident to vibration and to be able to diminish them in his product.

Heretofore, no accurate method of determining qualitative and quantitative stresses was available. These stresses were computed by rule-of-thumb measures based solely on static tests and experience, and a generous factor of safety was allowed to compensate for unaccountable excesses. All that is as completely outmoded today as the one-horse shay. With the newly developed electric strain gage, it becomes possible to find precisely what the stresses are in virtually any loom part. Intelligent employment of the wire gage in the textile field means the transition from suppositions to an exact determination of the forces to which a loom is subjected. A rational analysis of the stresses and strains caused by conflicting forces should lead to better design and improved loom action.

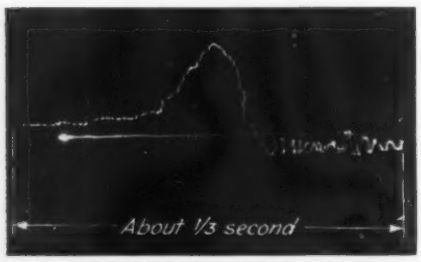


Fig. 3. *This stress record of a loom member in operation was made by photographing the light beam thrown onto the viewing screen by the oscillograph.*

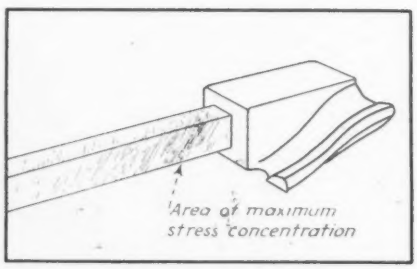


Fig. 4. *Lines on the picking shaft represent cracks which developed in a lacquer coating sprayed on shaft. Region and direction of stress are determined from crack pattern.*

DESCRIPTION OF GAGE. The gage is simply a length of resistance wire, approximately 1/1000 in. in diameter, looped around a small piece of insulating paper. Two small copper wires are soldered to the loop ends to serve as leads. Sometimes a piece of felt is cemented over the upper side of the gage to lessen the effects of temperature and to give mechanical protection.

The gages are made in a variety of sizes for different applications, but usually they are less than an inch long and less than half an inch wide. For one special application, which happened to be measuring the stresses on the narrow face of the neck of a vibrator connector while in motion, a special gage had to be devised which was only $\frac{1}{32}$ in. wide. A standard gage is now available in which the sensitive

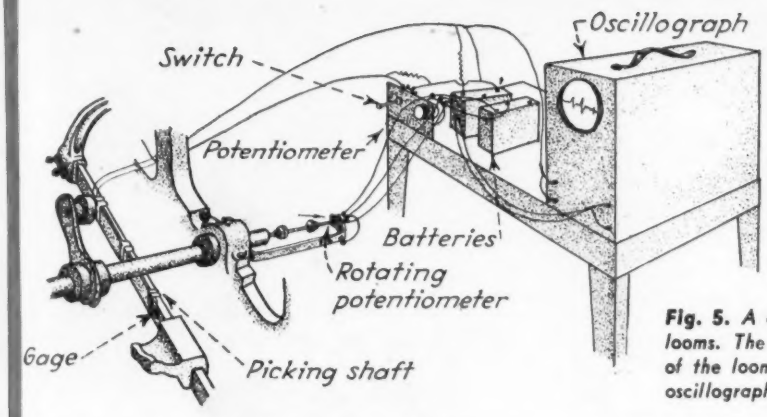


Fig. 5. *A circuit devised for use on slow machinery, such as looms. The arm of the potentiometer revolves with each cycle of the loom, providing a means for timing the sweep of the oscillograph beam.*

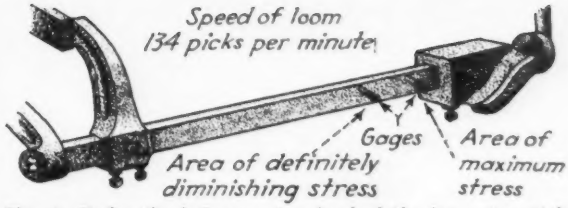


Fig. 6. *Under the full operating load of the loom, two picking shafts of different sizes were tested for stress load in the manner shown.*

wire is concentrated in an area $\frac{1}{16}$x$\frac{1}{8}$ in. Before the advent of the electric strain gage, a dynamic test in such a congested region of the loom would have been totally impossible; but now it is a commonplace occurence for the engineering department to request stress information on regions normally inacessible.

MEASURING AND RECORDING. In addition to the gage itself, it is necessary to use an apparatus for measuring and recording the intensity of loom stresses. The cathode-ray oscillograph, Fig. 2, is used for this purpose. It is an indicating device which shows the most minute fluctuations in an electrical current, regardless of how fast they occur, by throwing an electronic beam onto a fluorescent screen. The electric strain gage picks up a sequence of changing stresses and converts them into a series of corresponding electrical-resistance changes. The oscillograph, in turn, converts these resistance changes into a beam of light which moves up and down, wave fashion, as it proceeds across the viewing screen.

A still or a motion-picture camera is used to record the variations. Photographs of these light waves, or stress waves in this case, are called oscillograms, Fig. 3. With a pair of dividers and a good scale, it is relatively easy to assign accurate stress values to each peak and depression on the oscillogram. This is impractical through a mere visual observation of the stress wave on the viewing screen, because the entire wave lasts only a split second.

LOCATING STRESS. In order to know where and how to place the gages to get the results desired, the stresscoat method of spraying a brittle lacquer on the surface of the object to be stress-analyzed is used. The specification of the lacquer depends upon the temperature and humidity of the room in which the research is conducted. When a stress is transmitted to the loom part which is lacquer-coated, the coating shows fine cracks at the areas of stress. The closer the cracks appear together, the higher is the stress concentration. Another critical fact is that the cracks always run at right angles to the direction of the stress.

Since the strain gage must always be placed parallel with the direction of the stress, the two phases of location and direction are vital. It is also important to ascertain the areas of maximum stress, diminishing stress, and insignificant stress. The brittle-lacquer method affords an excellent means for obtaining this qualitative data, and it is capable of giving approximate quantitative data when used with care.

PICKING-SHAFT TESTS. To illustrate how stress analyses are applied to loom construction, assume that it is desirable to determine the relative merits of two picking shafts, sizes $\frac{7}{8}$x1$\frac{1}{4}$ in. and 1x1$\frac{1}{4}$ in. The picking shafts are given a coat of brittle lacquer and subjected to normal loom operation. The maximum stress generally manifests itself about 1$\frac{1}{2}$ in. from the picking shoe. The location, incidentally, is corroborated by mill experience; for when picking shafts fail, they usually break at about the location suggested.

When the area of maximum stress concentration has been located, a strain gage is cemented to that region. The gage is then connected into an electrical circuit with a measuring in-

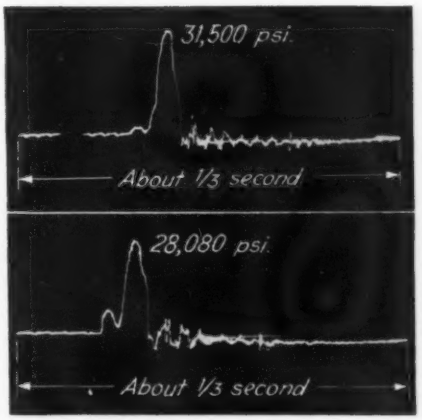


Fig. 7. *Oscillograms show the curves for two different sizes of picking shafts. The smaller shaft was stressed 3,420 psi. more than the larger shaft.*

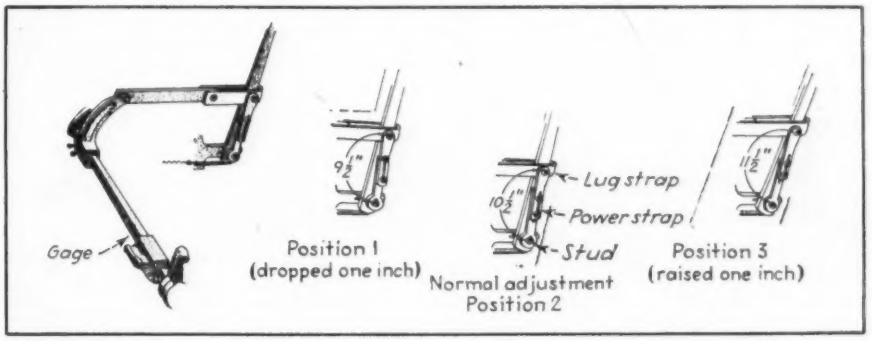


Fig. 8. *Varying the lug-strap adjustment caused significant changes in the stress load on the picking shaft.*

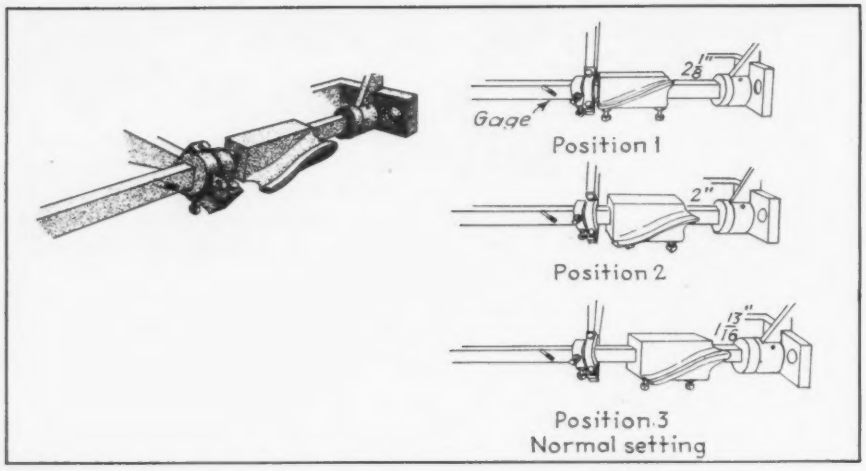


Fig. 9. Changing the position of the picking shoe 5/16 in. increased the picking-shaft stress 11%.

strument, such as an oscillograph. When the fully loaded loom is placed in operation, a quantitative analysis of the picking shaft stresses is achieved. At the points of greatest load concentration, stresses of 31,500 and 28,080 psi. were recorded for the ⅞x1¼ in. and the 1x1½ in. shafts respectively. These stress loads recurred with each operating cycle of the loom.

The stress for the 1x1½ in. picking shaft appears to be a trifle high for its size, but such a value might result from a stiffer picker stick or a bound shuttle. Considering the speed of operation of the loom, these stresses would be repeated millions of times in a year of normal operation. It is thus that fatigue strength has to be taken carefully into account in successfully designing a loom.

The use of a larger picking shaft results in a 10% reduction in the maximum stress. Even more important is the fact that a more uniform stress distribution is achieved.

LUG-STRAP ADJUSTMENT. To determine how the stresses in the picking shaft were affected by adjustments to the lug strap, a strain gage was attached to the shaft in the position indicated in Fig. 8. Since the principal stresses in the shaft were torsional and concentrated where the gage was located, the gage would thus pick up the more significant fluctuations in stress as the adjustments were made. The lug strap was set in three different positions, and the stress waves representative of each position were photographed from the screen of the oscillograph and calculations of stress made.

In position 1, the lug strap was set in a low position, 9½ in. from the stud upon which the picker stick pivots. With the loom otherwise operating normally, a stress of 32,400 psi. was recorded.

The lug strap was then raised to its normal adjustment, 10½ in. from the stud. No other changes were made. With the loom in operation, a stress of 27,700 psi. was indicated.

Again the lug strap was raised, this time to a position 11½ in. from the stud. In this position, of course, the pick is too weak. Making no other change, the loom was put into operation; and the stress dropped to 24,500 psi.

Summarized, this means that the stress in the picking shaft alone rises 17% merely by having the lug strap 1 in. below the recommended normal position. This study demonstrates conclusively that improper adjustment can be a considerable factor in causing the failure of loom parts.

PICKING-SHOE LOCATION. In other studies, the picking shoe was placed on the shaft in three different positions, as shown in Fig. 9. With the shoe set 2⅛ in. from the end of the shaft, a picking-shaft stress of 27,100 psi. was recorded; at a setting of 2 in., the stress dropped to 25,600 psi.; and at the normal position of 1 13/16 in., the stress dropped to 24,500 psi. Setting the picking shoe at any point closer to the end of the shaft than the normal position results in a weak pick and is impractical for stress study.

From the foregoing, it may readily be seen that an improper setting of the picking shoe, even as little as 5/16 in., results in an 11% increase in stress in the picking shaft. Thus, the importance of careful attention to the proper adjustment of the picking shoe and other loom components can scarcely be overemphasized.

CRANKSHAFT TESTS. Crankshaft tests revealed that of eight gages placed on the shaft, Nos. 3 and 4, Fig. 10, located on the power end of the shaft, represented the critical points of stress. With the unloaded loom running under otherwise normal conditions, gage No. 3 registered a stress of 4,140 psi. When the crank connector was loosened somewhat, this stress went up to 4,670 psi. When the center bearing was maladjusted 1/16 in., the stress jumped to 7,250 psi.

Gage No. 4 indicated a lesser, but important, increase under conditions of maladjustment. With the unloaded loom operating normally, this gage indicated a stress of 4,440 psi.; and with the center bearing 1/16 in. off its proper adjustment, this stress increased to 6,210 psi.

Even from this initial and preliminary study of crankshaft stresses in an unloaded loom, it becomes strikingly apparent that a faulty adjustment can raise the maximum stresses as much as 75%. The above figures may be increased when the loom is operating under full load, in which case maladjustment would become that much more serious.

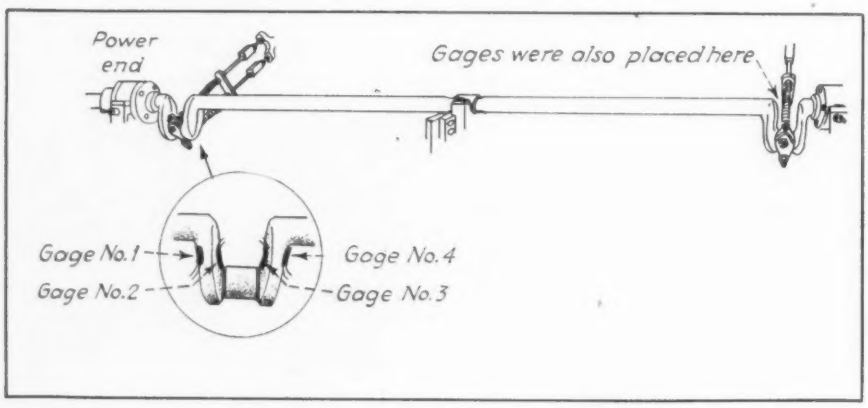


Fig. 10. Crankshaft stress was increased 75% by changing the setting of the center bearing 1/16 in.

The author wishes to acknowledge his indebtedness to Dr. A. C. Ruge, Consulting Engineer, Cambridge, Mass., for his review of the manuscript and his timely suggestions.

FABRIC LAMINATES—Growing Outlet For Textiles

By HAROLD L. REED
Assistant Editor, TEXTILE WORLD

Engineered fabrics will make possible the production of boats and other large objects by means of low-pressure laminating. In such products the structural properties of the fabric become of greatest importance.

HIGHLIGHTS: *Industry requires large quantities of Fiberglas and cotton duck—Special fabric constructions needed coupled with wider ranges of fabrics—Constructions of present fabrics outlined.*

PLASTICS, the much talked about, widely publicized industry, now affords the textile industry a substantial outlet for many of its fabrics and by-products.

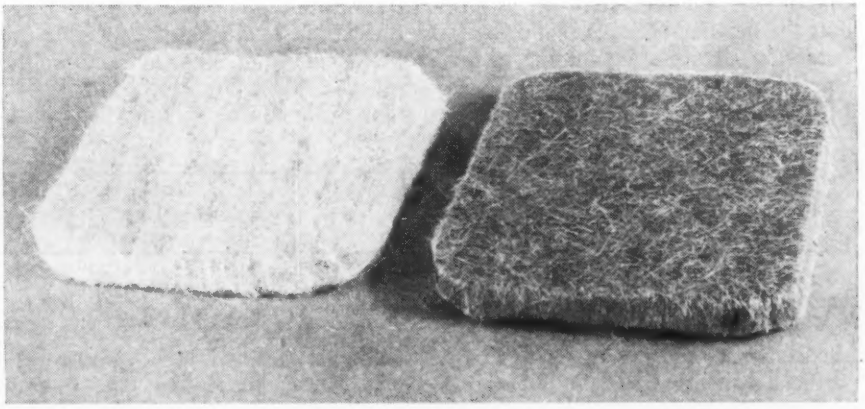
The plastics group has already been a large user of cotton fabrics and cloths made of other materials. For example, in the field of laminates it has been estimated by the Cotton-Textile Institute that 80% or more of the fillers used during 1943 were of cotton and this represents a 50-million pound consumption of cotton fabrics. These cloths range from 4-oz. fabric to 4-lb. duck. Large yardages of Fiberglas were also used.

POTENTIAL DEVELOPMENTS. Basically the plastics industry is divided into a number of separate groups, these including molding, fabricating, laminating, and coating. Each of these groups produces products that are unlike those of the others and accordingly have different fabric needs. As an example the molding division uses large quantities of chopped thread, cloth, and lint, all considered by the mill man as waste by-products of textile manufacture. Also, they use cheap cotton cloth. In the laminating end, users require fabrics made to specifications; in some cases the specifications are not very rigid, while in others the fabric must be specially constructed. For coatings, print cloths and fabrics made specially for this purpose are employed.

Potential market for textiles offered by laminates is tremendous.

Development of special resins, which may be used in impregnating fabrics and which require little or no more pressure in curing than that necessary to hold the layers of cloth in place, has resulted in the establishment of the low-pressure and contact-pressure laminating industry. This branch of the industry has the greatest potentialities because it permits, for the first time, the production of large, complex, three-dimensional units capable of bearing weight. In this type of work the fabric itself becomes of great importance because it imparts definite physical and also decorative effects in the final unit. Printed designs on fabrics can be used which will show through when clear resins are applied. Pigments can be incorporated in the plastic, or the fabric itself can be dyed, to impart opaque or translucent properties in various colors to the laminated sheet.

Bonded rovings, a recent textile development upon which H. M. Chase



Sisal fiber batts are used extensively for molding and for low-pressure work. These Co-Ro-Lite batts may be had in either the natural fiber state or impregnated with resin. It is possible for the fabricator to dye the batts and then add his own resin to produce unusual results. Batts come in thicknesses varying from 1/4- to 1-in.

TABLE I—Standard Fiberglas Fabrics

Cloth Number	Net Width Inches	Thickness Inches	Avg. Wt. Ounce per Square Yard	Type Weave	Yarn Warp and Fill	Construction	Minimum Break Strength Warp	Minimum Break Strength Fill
Type ECC-11 (Continuous Filament)								
108	38	.002	1.56	Plain	900-1/2	60 x 47	70	40
112	38	.003	2.19	Plain	450-1/2	40 x 39	100	70
113	38	.003	2.64	Plain	Warp 450-1/2 Fill 900-1/2	60 x 64	100	70
116	38	.004	3.37	Plain	450-1/2	60 x 58	160	100
127	38	.007	6.36	Plain	450-3/2	42 x 32	300	200
128	38	.007	5.92	Plain	225-1/3	42 x 32	300	200
138	38	.007	7.00	Craw'ft	450-2/2	64 x 60	300	200
140	38	.010	8.48	Plain	450-4/3	32 x 21	430	290
141	38	.010	7.88	Plain	225-2/3	32 x 21	430	290
148	38	.012	10.95	Plain	450-3/5	30 x 19	520	360
149	38	.012	10.23	Plain	225-2/4	30 x 19	520	360
161	38	.015	14.11	Plain	450-4/5	28 x 16	660	450
164	38	.015	12.80	Plain	225-4/3	20 x 18	525	525
Unidirectional Warp—			8.84				787	79
Type ESS-12 (Staple Fiber)								
248	38	.012	7.81	Plain	70/2	26 x 20	144	112
261	38	.015	10.32	Plain	40/2	20 x 14	169	120
294	38	.023	14.70	Plain	25/2	16 x 16	176	202

TABLE II—Cotton Fabrics Suitable for Low-pressure Laminates

Cloth type	Width Inches	Weight	Weave	Construction	Warp	Filling
Canvas		6-oz.	Plain	38 x 24		
Denim	37	2.75-yd.	Twill	68 x 40		
Drill	38½	1.93-yd.	Twill	72 x 60		
Duck, Army	28½	8-oz.	Plain	54 x 40	12/2	15/2
Duck, Army	28½	10-oz.	Plain	55 x 37	14/2	16/3
Duck, tent	30½	8.42-oz.	Plain	50 x 40	14/2	14/2
Duck, tent	38	11.25-oz.	Plain	52 x 44	13/2	13/2
Duck, tent	35½	8.35-oz.	Plain	60 x 60	22/2	22/2
Duck, tent	30½	13.65-oz.	Plain	46 x 34	11/3	12/3
Duck, enamel	38	2.00-yd.	Plain	84 x 28	8 to 14	5 to 12
Duck, numbered*	36	#6 (21.25-oz.)	Plain	36 x 36		
Duck, numbered	40	#10 (19.64-oz.)	Plain	51 x 31½		
Holland	38½	6.85-yd.	Plain	56 x 44		
Osnaburg	38	2.85-yd.	Plain	38 x 32		
Osnaburg	38	3.25-yd.	Plain	36 x 32		
Osnaburg	38	3.25-yd.	Plain	20 x 20		
Print	38	7.00-yd.	Plain	48 x 48		
Sheetings:						
Class A			Plain	40 x 38 to 48 x 48	up to 15	up to 15
Class B			Plain	44 x 40 to 52 x 48	16 to 21	16 to 21

* Entire range can be used from No. 1 to 12; these vary from 19 to 30 oz., based on 22-in. width.

TABLE III—

Grades of Laminating Materials Established by A.S.T.M.

Type II—Cellulose fabric-base laminating material

GRADE C—A fabric-base laminated material made throughout from cotton fabric weighing over 4 oz. per sq. yd. and having a count as determined from inspection of the laminated plate of not more than 72 threads per inch in the filler direction, nor more than 140 threads per inch total in both warp and filler directions. A strong, tough material suitable for gears and other applications requiring high impact. The heavier the fabric base used the higher will be the impact strength, but the rougher the machined edge; consequently, there may be several subclasses in this grade adapted for various sizes of gears and types of mechanical service. Should not be used for electrical applications except for low voltages.

GRADE CE—A fabric-base laminated material of the same fabric weight, and thread count as Grade C. For the electric applications requiring greater toughness than grade XX, or mechanical applications requiring greater resistance to moisture than grade C. Exceptionally good in moisture resistance.

GRADE L—A fine weave fabric-base laminated material made throughout from cotton fabric weighing 4 oz. or less per sq. yd. As determined by inspection of the laminated plate, the minimum thread count per inch in any ply shall be 72 in the filler direction and 140 total in both warp and filler directions. For purpose of identification, the surface sheets shall have a minimum thread count of 80 threads per inch in each of the warp and filler directions. This grade is suitable for small gears and other fine machining applications, particularly in thickness under ½-in. Not quite as tough as grade C. Should not be used for electrical application except for low voltage.

GRADE LE—A fine weave fabric-base laminated material of the same fabric weight, and thread count as grade L. For electrical applications requiring greater toughness than grade XX. Better machining properties and finer appearance than grade CE; also available in thinner sizes. Exceptionally good in moisture resistance.

of Riverside & Dan River Cotton Mills has done considerable work, are made possible because of the resins which are used to bond or hold the fibers together.

Bonded webs as produced by Chicopee Mfg. Co., in which fiber webs are held together by resins, are textile developments that tie in with plastics. Such types of webs may be impregnated with suitable resins that are compatable with those in molding so that the material may be used as a reinforcing agent in compression molding.

Coated yarns, such as Plexon, suggest that practically any yarn may be coated with a plastic. These yarns can be woven, knitted, or braided into many decorative and useful items that are colorful and practical in shoes, handbags, and even window screens.

Coated fabrics, of course, have been used for years and run the gamut from artificial leather to hospital sheetings and arctic tenting material.

An entirely unexplored field exists, according to Morris Sanders, outstanding consultant on plastics, for using low- and contact-pressure laminates in the field of household goods. Such items as wastebaskets, table tops, screens for dividing rooms, and the like, can be laminated of printed designs and tie-in sales can be made of the same fabrics featuring like designs for curtains and drapes.

While batts of sisal fiber, either in its natural state or impregnated with resin, are being used extensively now for certain products, it is possible that this field might be the long-wanted solution as to the successful use of ramie in a commercial product.

Synthetic fibers such as nylon, Saran, Velon, and other like fibers must also be classed as plastics as most of them are thermoplastic in nature and are produced from high polymers.

The actual potential of these plastics, especially when combined with textiles, is still unexplored. However, it is certain from the developments made during the war in combining plastics with textile products that a large and fast-developing industry is on the horizon and an active part has been played by textile mills.

FABRICS FOR LAMINATING

THE PLASTICS INDUSTRY in the past purchased fabrics simply as filler materials and it was strictly a price proposition; the fabric that was the cheapest was the one that was used. However, this is not true with fabrics used in low-pressure and in contact-pressure laminating. In this field the fabric imparts to the finished product many of the desired physical properties such as strength, impact resistance, torsion resistance, moisture absorption, etc. The fabric now becomes of great importance and should be designed for the given purpose.

LOW-PRESSURE LAMINATES. Fiberglas cloths have been widely used as a

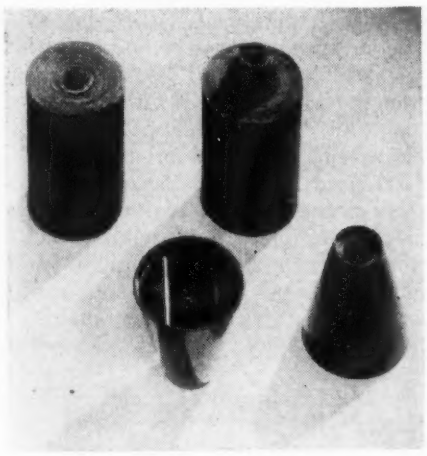
fabric base for low-pressure work. Some of the most common fabric constructions are given in Table I.

Duck fabrics have been used and can be employed successfully as a fabric base. The most popular duck is the 8-oz. fabric, as this appears to have the body and the fabric construction that goes to produce a laminate with good physical properties, although the product is not so superior in physical properties as when Fiberglas is used as the filler. Some of the acceptable cotton fabrics for low-pressure work are listed in Table II.

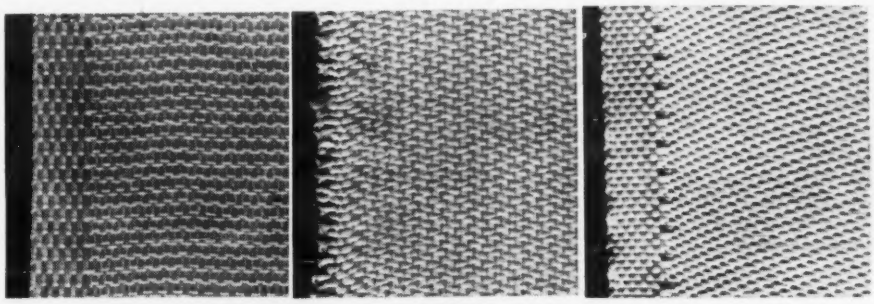
HIGH-PRESSURE LAMINATES. The high-pressure branch of the industry is much older. In this branch the laminates are usually in sheet form, and utilize such materials as fabrics, chopped cotton, flock, fibrous material, and other like products as filler material.

Most of the fabrics used in this class come under specifications of the American Society for Testing Materials. The specifications are broad and give either maximum or minimum weights and fabric counts. These specifications are reproduced in Table III, showing the various fabric grades.

In general, where the product is in sheet form or where close-tolerance work is required, fabrics according to A.S.T.M. specifications are used. In other instances, and in compression molding where the fabric acts only as a filler, practically any cotton cloth that is cheap in price can be used. In such plastic products extensive use is made of cheap fibrous material.



Compression molding in complicated shapes is possible using rolls of resin-impregnated cloth to form the charge for the mold. This cloth, known as Cloth Resin X-Crepe is a product of Cincinnati Industries, Inc., and can be used for laminates and for other purposes because it is given a crimping operation. The crimp permits it to be stretched about compound curves.



X-1551 Unidirectional Warp | X-1662 Unidirectional Fill | X-1809 Satin Weave

Special Fiberglas fabrics developed for the plastics industry include a unidirectional warp, a unidirectional filling, and a satin weave. The unidirectional warp weave cloth, No. X-1551, contains heavy warp yarns which are held in place by light filling yarns in such a manner as to prevent the warp yarns from crimping. The unidirectional filling cloth, No. X-1662, is constructed just the reverse to the warp fabric, thus making it possible to use this fabric when cross-laminating is required. The 8-shaft satin, No. X-1809, has better bidirectional properties than a plain-weave fabric, eliminating the necessity of cross-lamination.

LAMINATORS' VIEWS ON FABRICS

COMMENTS ON FABRIC REQUIREMENTS by laminators may be of assistance to textile men who intend to enter the market for supplying special fabrics to the plastics industry.

As an example, E. R. Dillehay of The Richardson Co. states, "In general we prefer for most purposes the ordinary balanced weave of 8- or 10-oz. cotton duck, which makes a good all around reinforcing cloth. We also use some light-weight material of less than 4 oz. per sq. yd., and for certain purposes use material that is free of sizing or that has been extracted and desized.

"It is possible," continues Mr. Dillehay, "to redesign fabrics to give better properties for certain end uses. However, almost always when one property is improved another property is sacrificed. For example, a fabric that is made from a tightly twisted yarn gives improved impact strength, but is less resistant to moisture absorption. Other yarns that are ordinarily used, besides those of cotton, include asbestos and glass. The asbestos fabrics have never been widely used because of their high cost and the difficulty in obtaining good properties other than some increased heat resistance. The glass fabrics, on the other hand, have promise of a bright future as they give very high impact strength and also have greater heat resistance and very high tensile strength when properly made."

According to J. Alden Murray, director of technical service, Plaskon Division, Libby - Owens - Ford Glass Co., "It is impossible to generalize regarding types of available fabrics most useful or regarding new types most needed, since for almost every article made, and different resin used, some different fabric is found best. Many times this fabric is satisfactory, but more often it could be considerably improved, in one way or another, for the particular application in which it is used. About the only generalization that can be made is that there is considerable room for new fabrics with special properties for use in laminating. One cannot be much more explicit than this, since one particular application may require extreme stretchability and another requires lack of stretch; one application may require the highest possible absorbency and another require the lowest possible absorbency, and so on through the list of properties of fabrics. The need, it seems, is a greater range of properties in fabrics, wide as it now may be."

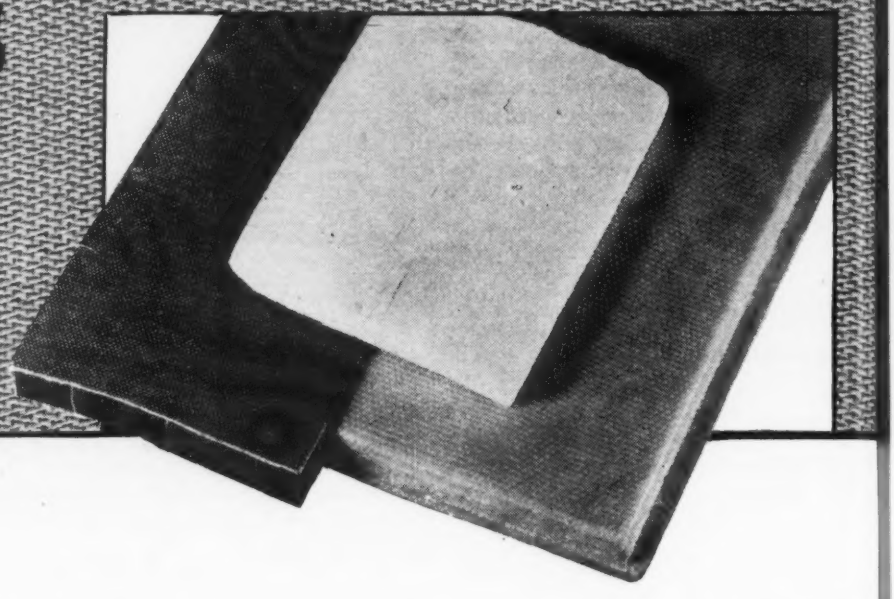
Sizing materials on cotton fabrics give trouble because they increase the moisture absorption of the fabric and sometimes react unfavorably with the resins. It is possible that different sizings or better methods of desizing will assist.

"The possibility of producing a cotton fabric," according to a report of the Cotton-Textile Institute, "with minimum crimp in the warp yarns and with the stretch of the cloth being virtually confined to the filling direction, or a fabric in which the warp and filling characteristics would be exactly reversed, so intrigues certain laminators in appraising the future ex-

(Continued on page 112)

Structural Materials Made From FIBERGLAS FABRICS

By JOHN REEVES
Forever Plastics Co.



HIGHLIGHTS: *Combinations of glass-cloth-reinforced plastic faces with a lightweight cellular core have possibilities in production of truck and trailer bodies, airplanes, boats, and portable houses—Fiberglas must be heat treated before it can be used to best advantage.*

Various combinations of core-types or sandwich constructions can be used in built-up sections, as shown. One type has a cellular cellulose-acetate core between glass cloth, a section of the plain core material being visible, while a foam rubber core is used in other laminate.

WOVEN CLOTH may soon find its way into structural materials on a scale surprising to those who are not conversant with the strength and weight characteristics of textile-plastic laminates. In this field at the moment, glass cloth holds the center of the stage because its properties give it a wide margin of superiority over the other materials which have been utilized. As information spreads relative to the characteristics required for optimum service in laminated plastics, it is likely that research on other fibers will be directed toward developing the necessary strength, water-resistance, and thermal reactions to qualify them to take a share in this growing field.

Apparent lack of tensile strength in glass, according to Frank W. Preston, of Preston Laboratories, arises from its brittleness since a crack once started in a large piece does not readily stop. However, when a very minute area of glass is tested, as in the case with a fine glass filament, this phenomenon does not take place nearly so readily. The individual glass filaments which compose the yarns frequently show tensile strengths in excess of 3,000,000 psi. This figure is not realized in the yarns, which normally test between 100,000 and 300,000 psi. These latter figures, however, roughly correspond to the tensile strengths of high grade steels, while the material itself has only one-third the weight of steel.

In the manufacture of Fiberglas, the fine filaments are given a coating of gelatine, starch, vegetable oils, complex amine salt, polyvinyl alcohol, and a neutral emulsifier to guard against abrasion. The finished cloth, when used for plastic laminates, is heat-treated to drive off the volatile oils in the coating and leave a partially carbonized deposit on the fibers. This enables the plastic bonding resin to grip the fibers much more firmly, and is important since the edgewise compressive strength of the molded laminate will be a function of the ability of the plastic bonding agent to hold the glass fibers rigidly in column.

The molder, who impregnates the heat-treated cloth with special types of resins, such as those produced by Bakelite and others, places one impregnated layer of cloth on top of another until the desired thickness is built up, and molds this laminate by applying heat and moderate pressures.

Glass cloth laminates made in this way show tensile and edgewise-compressive strengths of approximately 50,000 psi. By comparison, the tensile and edgewise compressive strength of plastics reinforced with cotton cloth run only about 10,000 psi. Where strength is required in only one direction, the tensile and edgewise-compressive strength of glass cloth laminates can be raised to approximately 100,000 psi. by using a unidirectional type of weave not unlike tire-cord fabric. This construction places the majority of fibers in the direction of the stress, so that they lie in substantially straight lines which utilize their strength to the maximum.

A further important advantage of glass cloth is that it does not absorb water. Thus, moisture cannot cause the reinforcing material in the laminate to swell. It has been found that glass-cloth-reinforced plastics when immersed in water for a period of 24 hr. pick up as little as 0.3% of water by weight. This compares with an average figure of approximately 5% for laminates reinforced with cotton cloth.

A third important advantage which glass-cloth brings to plastic laminates is extreme dimensional stability under changing temperature conditions. Most of the plastic bonding resins which are used with reinforcing materials have the high coefficient of thermal expansion of 8.0×10^{-5} in. per inch per 1° C. change in temperature. This means that, as the average plastic laminate cools from the temperature at which it has been molded, which may be anywhere from 200° to 350° F., the resin tries strongly to contract thereby setting up stresses in the molded piece which cause it to shrink; and, since the shrinkage may not always be uniform, the piece is frequently warped out of shape. Simi-

larly, the average plastic laminate when in use tends to shrink or expand with subsequent variations in the temperature conditions to which it is subjected. In plastic laminates reinforced with glass cloth, it has been found that the cloth furnishes upward of 80% of the total strength of the laminate. Thus the glass cloth is able to hold mold-shrinkage to an almost imperceptible point, and the laminates are extremely stable under subsequent changes in temperature conditions. They have the extremely low coefficient of thermal expansion of approximately 1.0×10^{-5}, which is almost as low as for glass itself. By comparison, plastic laminates reinforced with cotton cloth have the fairly high coefficient of thermal expansion of 2.3×10^{-5}.

The unusual strength properties of these laminates, plus their resistance to moisture absorption and extreme dimensional stability, has recently led to the development of a structural combination which appears to have startling possibilities. Glass-cloth-reinforced plastic faces are molded on both surfaces of a hard, but extremely light weight, cellular core material. Although there are several different types of this core material under development, the most popular at present appears to be a cellular form of hard synthetic rubber. The cell structure is discontinuous and on immersion in water for 24 hr. the core material picks up only approximately 3% of its weight. At temperatures slightly above the boiling point of water the material, which comes in sheet form, will soften slightly, and may be molded to simple and compound curvatures. It also has a thermal insulation value which compares favorably with that of cork, its rate of thermal conductivity running between 0.21 to 0.30 B.t.u. per hour per square foot per inch of thickness. The best examples of this core material, in densities of approximately 10 lb. per cubic foot, show transverse tensile strengths and ultimate transverse compressive strengths of approximately 300 psi. and horizontal shear strengths of 350 psi.

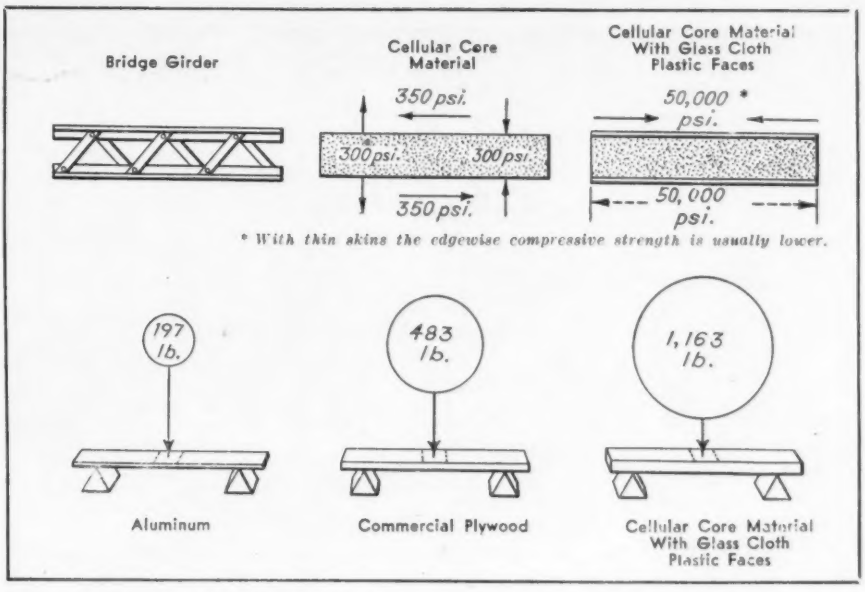
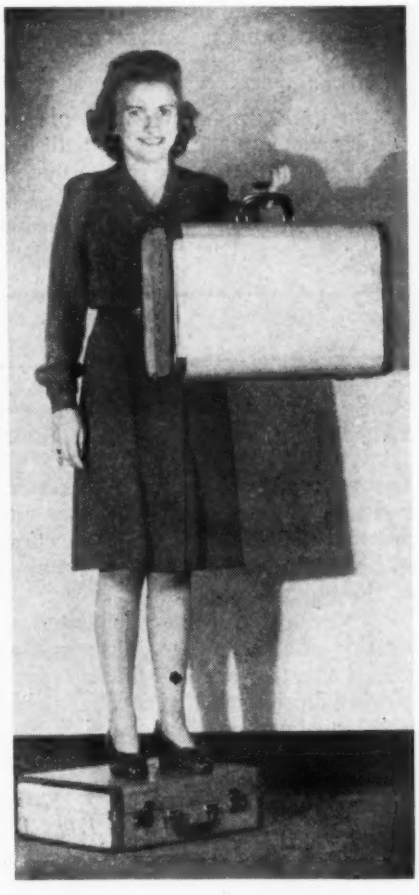


Fig. 1. Three upper drawings illustrate the strength contributed by the girder principle in the sandwich construction.
Fig. 2. Three lower drawings contrast the point of failure of three like panels of different materials.

STRUCTURAL FUNCTION The structural advantage of the combination can be grasped by referring to the diagrams given in Fig. 1. In this figure, A represents a cross-strut bridge girder. Obviously the struts have no structural value of their own, their sole function being to hold the top and bottom faces of the girder firmly in line. B represents the principal qualities that have been developed in the core material. Just as with the struts in the bridge girder, the core material has no appreciable structural value, and in fact may be readily snapped by hand. But also like the struts in the bridge girder, this core does have the ability to prevent the faces applied to it from buckling inward or outward, or from shearing sideways. C shows the core material with glass cloth reinforced plastic faces molded on each surface. To break this sandwich combination shown at C now requires an astonishing force.



A practical use for structural laminates is illustrated. The traveling bag held weighs only 3 lb. 5½ oz., and the girl is standing on a similar bag but of slightly heavier construction which will hold a 175-lb. person.

Fig. 2 illustrates graphically the loads that were supported before failure by 12 x 24 in. panels of aluminum, commercial plywood, and a combination of Fiberglas-reinforced plastic faces molded on a light-weight cellular core. Each of these specimens had almost exactly the same weight of 1¼ lb. per square foot.

This combination of Fiberglas-reinforced plastic faces with a lightweight cellular core was first experimented with during the war as a general airplane structural material. It was soon discovered, however, that the combination, with a synthetic type of hard cellular rubber core, had important dielectric properties, and its use for radar antenna-housings, which frequently had to be of considerable size and still stand the air-loads created by the fastest planes, grew rapidly. At the Radiation Laboratory, M.I.T., Cambridge, Mass., in conjunction with both the Army at Wright Field, Dayton, Ohio, and the Navy at the Naval Aircraft Factory, Philadelphia, Pa., the complicated process of determining the correct thickness of face material and core relative to its electrical properties and strength was worked out.

Specifications for these "radomes," as they were called, were passed on to the molders who worked out the necessary fabrication techniques which are now useful where materials of high

The traveling bag, also shown in the other illustration, is being made up in Foreval laboratory. Cloth is placed in mold and then treated with resin. The mold and resin-impregnated fabric are placed in a rubber bag and sent to an autoclave where pressure and heat bring about the bonding of resin and fabric. Air is exhausted from rubber bag to bring close contact with mold. In the background glass cloth is being heat-treated to carbonize the oils and sizes in the cloth, thus creating a better bond between resin and fabrics.

strength and lightness are important. A tray, for example, can be made which is extremely light yet rigid, strong, and water-resistant. Luggage and luggage handles have been made that are truly light and strong. Combinations in flat panel form are suitable for light-weight partition work, or for self-supporting floorings for airplanes, boats, and automobiles. Truck and trailer bodies are a possibility; as are also railway-car bodies, furniture, airplanes, boats, portable or prefabricated houses, etc.

The high insulation value of the cellular core and the extreme lightness of the construction make it valuable for portable refrigeration work. The low coefficient of thermal expansion of the faces is particularly important in that use, since the warping stresses between the warm exterior and the cold interior walls will be minimized.

Fluid-pressure molding of the sandwich-construction cloth-and-plastic laminates facilitates manufacture, since only one die is necessary and there is no size limit beyond the size of the available curing chamber. One female die is made, and the required layers of impregnated glass cloth are laid inside that die. The core material, preformed to the inside contour of the die, is placed against these layers, and a second skin of impregnated glass cloth laid upon the core material. This entire assembly, including the die, is then enclosed in a large rubber bag, and the air exhausted from the bag by a vacuum pump, so that atmospheric pressure will hold the materials against the die. The bagged assembly is then placed in a large steel chamber, the chamber sealed, and steam forced in to provide additional pressure and heat. This welds the materials into a single structure against the contour of the die and cures the plastic. Tolerances on thickness of products so made can be held to 0.010 in. Where great strength, precision and dimensional stability are not necessary, cotton cloth may be used.

The textile content of these laminates makes them possible, and, as they grow in applications, so will the textile yardage consumed grow. Use of colored fabric at the surface of the laminate lends to the product color or pattern or texture as the case may demand. A new and apparently promising field lies ahead for textile consumption.

LAMINATORS' VIEWS ON FABRICS

(*Continued from page 109*)

pansion of the use of their products that they would like to see the textile manufacturers tackle this problem ahead of all others."

An example of what may be done is given in the report in connection with laminated safety helmets. In this item it is desirable to have the maximum impact strength in the crown. As a result tapered weaves were worked out to insure more cotton threads for stronger reinforcing where needed.

Continuing, the report states, "Several technicians in the plastics industry stress the fact that it is essential that more efficient and less expensive methods be devised for the removal of wax from the cotton fiber. While the dewaxing technique now employed has resulted in material gains to the laminators, there remains an urgent desire on their part to see further improvements made in this direction without impairing the tenstile strength of the fibers treated.

"There has also been suggested as worthy of attention a study of the effects of water-repellent finishes—employing finishing materials compatable with the impregnating compounds—and also a study of the merits of even the sanforized-shrunk finish in connection with the perfection of control of warpage and distortion of plastics as a result of the absorption of moisture by the fabric filler."

"Knitted fabrics are the best for three-dimensional work," stated Morris Sanders, when asked as to fabrics best suited for low-pressure and contact pressure laminates. Mr. Sanders believes that where strength is not the important factor, as in many items that may be made for household purposes, the knitted fabric will give the required stretch necessary for complicated shapes.

"Another problem that should be given attention in connection with fabrics," stated Mr. Sanders, "is development of suitable printed designs to be used on fabric that is to be stretched during molding in order not to create a distorted design in the end product. Use of printed designs and transparent resins permit many unusual decorative effects."

While some of the suggestions set forth are not entirely problems for the textile industry, most of them do demand the industry's attention and cooperative action in studying these problems by both the textile industry and the plastics industry should result in the establishment of new outlets for textiles.

Chadbourn Hosiery Mills CONVERT to NYLON

Model shows fit of Larkwood vamp-toed hose while inset reveals heel and seaming used. A new construction is contemplated when nylon conversion is completed.

HIGHLIGHTS: *Technical difficulties are as important as distribution factors in determining early supply of nylon—Employee training and instruction stressed as means of preventing damage during handling—Knitting machines are being overhauled—Change in sizing and dry knitting foreseen.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

PREPARATIONS FOR NYLON production at the Chadbourn Hosiery Mills reveal that production men have a job to do if "she" gets those nylons Christmas morning. Time, production scheduling, and distribution run against the possibility of a heavy supply of hose for Christmas shoppers; and many knitting mills are further handicapped by lack of prewar experience and essential equipment, such as preboarding. Technical difficulties are expected in the change from cellulosic yarns to nylon. The latter's high strength and toughness do not remove the necessity for careful handling during knitting and other processes.

In the general offices of Chadbourn Hosiery Mills, Inc., Charlotte, N. C., J. C. Bolles, president, and W. W. Sharpe, Jr., vice-president, estimate that the nylon production of the five Chadbourn mills may eventually reach that of the 1939-40 period; but that the present conversion is directed toward only 35 to 50% of that capacity. Wide distribution will result in a thin spread of hose to the consumer, and the speed of distribution depends upon yarn supply and the skill of production executives now engaged in changing from rayon to nylon.

PLANT PREPARATION. The machinery layouts of most Chadbourn mills are already geared for nylon production with the exception of those units which have to purchase preboarding equipment. At the Larkwood mill, one of the Chadbourn subsidiaries, vice-president Robert H. Moeller states that suitable equipment is in place for production of full-fashioned and seamless nylon hosiery.

In the sequence of operations for full-fashioned nylon at the Larkwood mill, the more important phases of the preparation work are concerned with the knitting. Knitting machines are being thoroughly cleaned of the fuzz and lint which accumulated from rayon and cotton production. Surfaces of machine parts which come in contact with the yarn are given special

Nylon Timetable

Because of the public interest in the facts of nylon conversion and in the problems facing the production men responsible for the technical changeover, TEXTILE WORLD'S editors have followed the step-by-step conversion of the five Chadbourn Hosiery Mills to nylon. On-the-spot details of that conversion are included in this article.

In so far as distribution is concerned, the facts obtained do not encourage the belief that a large supply of nylons will be on the market by Christmas. For volume production, the executives of Chadbourn Hosiery Mills, Inc., estimate the following time chart:

Five weeks from receipt of yarn to knitted fabric in quantity.

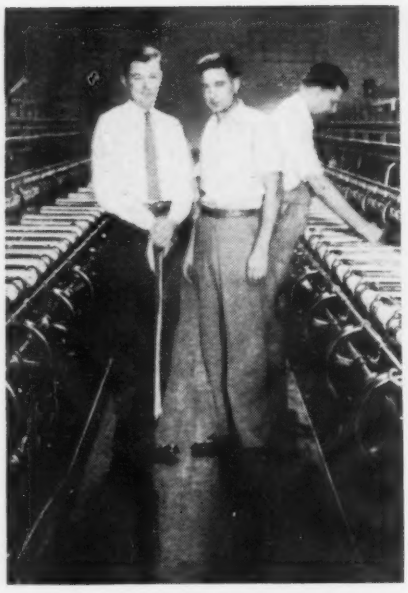
One week from knitted fabric to gray finished hose.

One week from finished hose to boxed and ready-to-ship hose.

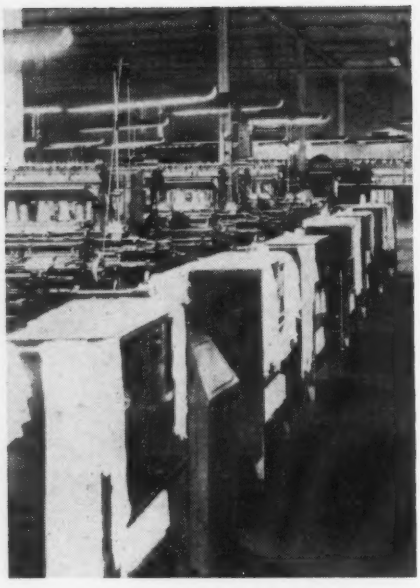
Two weeks from ready-to-ship to consumer distribution.

While the technical facts in this survey emphasize that immediate conversion is directed toward methods which typified pre-war production of nylon, there is ample evidence that technical changes will continue beyond the conversion period. For one thing, new methods of manufacturing and handling nylon, such as sizing and one-process knitting, are coming to the foreground. With the development of these and other advances, knitting mills will be in technical conversion for some time.

Hose constructions also are changing, and this will also affect the nylon knitter. The Chadbourn Hosiery Mills, for example, will soon announce a major change in the styling of their Larkwood vamp-toe hose, as nylon returns in greater volume.



H. P. Sharp, manager of the Burlington plant, holds a sample of a 51-gage stocking while conferring with Frank Hoffeker, superintendent.



Ample storage cabinets are provided next to the 51-gage machines. For the present, nylon used is being knit wet in accordance with prewar practices.

Cloth-covered, portable trays, shown here in the Larkwood plant, are used for storing nylon hose and for transportation. Each holds 10 or more dozen pairs.

inspection since nylon may be cut or snagged by rough or worn parts. Following cleaning, a thorough reconditioning and overhauling is given the machines. In addition, as many new parts as necessary are installed.

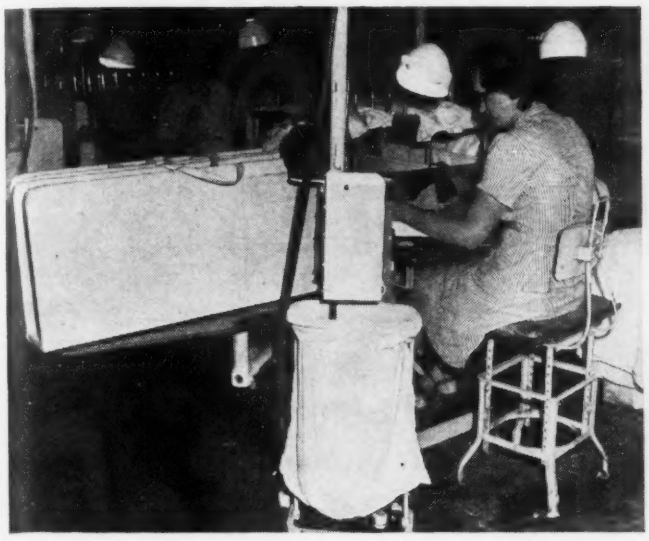
Superintendent John P. Mitzel states that wet-knitting procedure will be followed in the immediate conversion to nylon, but he and other company executives are aware of the research in sizing and dry knitting of nylon and are prepared to take advantage of improvements in this or other techniques. For the moment, the nylon yarn passes through an oil emulsion bath in the moistening troughs as shown at the left on the full-fashioned machines. Nylon is sized to reduce pulled threads, permit a better formation of stitches, and protect the yarn from grease and dirt. The sizing material can be easily removed in the boil-off.

HUMIDITY Central-station humidity and air-conditioning are both used in some parts of the Chadbourn mills. Cellulosic yarns absorb a large amount of moisture, which is also valuable in controlling lint and fuzz. For rayons, therefore, the knitting plant would maintain a relative humidity of approximately 60%. For nylon, the relative humidity is reduced considerably. In fact, excess moisture can be very troublesome to nylon knitting. Because of the presence of size, the yarn may become sticky and adhere to the porcelain guides; or the size itself may collect upon needles and sinkers. Sticky yarn causes pressoffs or tight stitches, and deposits of size on the machinery is objectionable from the standpoints of appearance and operation.

In the processes which follow knitting, the Chadbourn mills are also making extensive preparations for

Looping at the Burlington plant. The same type trays are used here as at Larkwood (Charlotte) for handling the hose, as can be seen in the picture above and on the next page.

Mirrors behind and below assist this operator at Chadbourn's Burlington plant to inspect a nylon stocking which has been pulled over a glass form.



This inspection table at Larkwood is adjustable in height as is the posture chair. Equipment is similar to that at the Burlington plant.

Before being reused upon the return of nylon, the forms on this Paramold preboarding machine were checked for roughness or burrs.

nylon. While looping and seaming will not change materially, the problem of multiple handling through later processses is of extreme importance. Improper handling results in snags or other distortions in the hose. The cloth-covered, portable trays shown in several of the photographs are used exclusively for storage and transportation of nylon hosiery for looping, seaming, and inspecting processes. The trays hold 10 or more dozen pairs of hose and thus lend themselves readily to safe and economical handling.

The use of specialized machines, such as the inspection machine shown, is further evidence of careful handling. This is the Edward R. Ammon machine which comprises visual and mechanical inspection of hose for manufacturing defects. It was first described in TEXTILE WORLD'S Textile Equipment News section in January, 1940, and is especially designed for handling nylon because of the smooth, unbreakable-glass construction of the forms. An automatic counter, a full-view mirror inspection of hose, finger control of form expansion, and speed of operation are other features of this machine. Included in the inspection set-up are unique bag changers which exchange a full bag for an empty one when the operator touches a lever.

It is this necessity for careful, snag-proof handling of nylon which will require considerable employee-training before a volume of hose begins to flow through the plant. Personnel director R. Thurman Taylor, Jr., estimates that one month will be required to train an employee in the proper handling of nylon if he has had no previous nylon experience. The problem will be great even in plants which formerly used nylon as a result of the tremendous wartime shifts in personnel. Modern methods of training developed during the war, such as JMT and JIT, will help in this program; but the company expects largely to utilize its own instruction program. To illustrate a detail, it will be necessary for certain operators at the Chadbourn Hosiery Mills to wear white cotton gloves when handling nylon hose.

PREBOARDING. Preparations made for preboarding are largely cleaning and inspecting the forms for burrs or other imperfections which may snag or otherwise damage the nylon hose. However, there are some other aspects of the preboarding process which will require careful supervision and instruction of personnel.

First, preboarding is essentially the application of heat to boarded hose. A high temperature is needed to set the nylon permanently, but as a part of employee instruction it is emphasized that nylon can be distorted or even melted if the temperature is too high.

At Chadbourn mills, the preboarding machines have movable carriages which insert and remove the boarded hose. Thus, hand operations are limited to placing the hose upon the form. One earlier preboarding method required the use of hand-moved racks.

The hose may shrink during preboarding process; and consequently, the courses per inch may be greater after this operation. From the standpoint of the knitting superintendent, this shrinkage may be figured as a contraction in fabric and the proper allowance made in fabric construction. No overall percentages are available for

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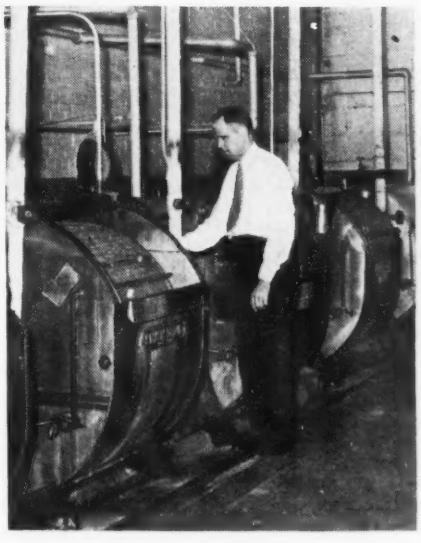

John Dulin, Larkwood finisher, prefers split-bath dyeing. Scouring, dyeing, rinsing, and finishing are all carried out in these rotary machines.

Trade-marked rayon hose, being packaged here, are making way for Larkwood's nylons which will have a distinctive label.

Systematized Cleaning Saves ELECTRICAL EQUIPMENT

By D. L. GIBSON
Insulation Engineer
Westinghouse Electric Corp.

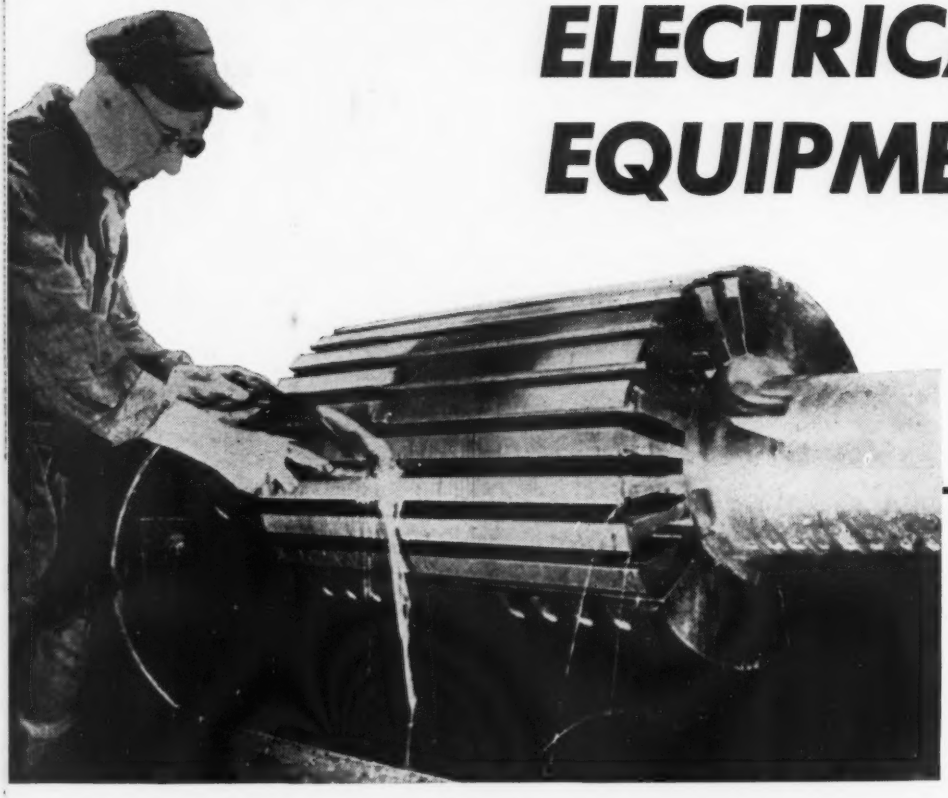

Fig. 1. Cleaning grease, oil, metal chips, and dirt particles from a slotted rotor with solvent. Note that brush is used to insure complete removal of contamination within slots.

HIGHLIGHTS: *Flooded electrical equipment may be cleaned with water—Equipment then must be dried slowly to prevent steaming—Compressed air and solvents are advocated for cleaning dirty and greasy motors.*

FLOODS AND OTHER DISASTERS often play havoc with the electrical equipment of a mill, especially when the motors, generators, and other equipment are inundated. In cases where equipment has been exposed to chemical fumes or subjected to flood waters, salt water, or water played on a fire, special cleaning with water or solvents may be required.

Making provision for facilities to do the job economically after a careful analysis of the cleaning problem will save much money, time, and repeated cleaning and subsequent operations. There are several practical methods from which to select.

METHODS OF CLEANING INSULATION. Standard methods of cleaning insulation include: wiping the parts with lintless cloths soaked with solvent; blowing the dirt out with air pressure; drawing the dirt off with vacuum cleaning apparatus; spraying or immersing in solvents; and washing with water. Specialized methods include the use of vapor degreasing.

Machines treated with asphalt base varnishes cannot be cleaned by vapor degreasing without complete stripping and removal of varnish. Low-powered solvents should be used on asphalt-base varnishes if the film is not to be removed. Synthetic varnishes will stand more severe cleaning methods. Cores stripped for rewinding may be further cleaned by sand blasting, vapor degreasing or solvent immersion.

BLOWING OUT AND DRAWING OFF DIRT. Blowing out dirt with air at about 40 to 50 lb. pressure is often effective, but it usually removes the loose dirt, and not the embedded material. Windings should not receive the full force of the air pressure to prevent blowing dirt into cracks in the insulation. If vacuum-cleaning equipment is available it should be used as it does a good cleaning job and in addition does not distribute the dirt around the shop.

USE OF SOLVENTS. When the accumulation of dirt on the frame and insulation contains oil and grease, an organic solvent will be required to remove it, as shown in Fig. 1. Solvents can be applied by wiping with lintless cloths moistened with the cleaning fluid; this method cleans only the readily accessible places.

Pressure spraying or immersing the parts in a bath of the solvent reaches the inaccessible places. Small motors can be easily cleaned by hanging on racks and dipping in solvents.

These methods adequately clean the surface of the machine for repairs, or prepare the insulation for additional varnish treatment or for removal of a few coils. They do not clean out vent ducts, dissolve varnish, loosen coils in the slots, or clean slot laminations. The baked varnish film is rarely injured.

In general there are three types of organic solvents in use for cleaning:

(1) Petroleum distillates of low solvency power, such as mineral spirits or Stoddard's solvent.

(2) Petroleum distillates of a medium solvency power, such as naphthenic mineral spirits.

(3) Carbon tetrachloride.

Solvents for cleaning purposes should have flash points of approximately 100° F., or greater, and a solvency power (kauributanol value)

in the range of 30 to 45. Such solvents are inexpensive. They evaporate leaving little or no residue.

Carbon tetrachloride should be used only when a very severe dirt condition is encountered, and then only with special health precautions. In some cases it is mixed with petroleum solvents to increase their cleaning power, and decrease the fire hazard. A mixture of 50% carbon tetrachloride and 50% mineral spirits is non-inflammable, but the vapors mixed with the right proportions of air are explosive. In no case should alcohols, benzol, or toluol be used. They are severe, will dissolve or soften the varnish present, are extremely toxic, and are fire hazards.

VAPOR DEGREASING METHOD. Vapor degreasing utilizes the principle of condensing hot solvent vapors on the metal to be cleaned, which washes off the grease and dirt, through a continuous condensing process. The washing solvent is always clean, since it condenses on the surface from a vapor. Solvents used are high boiling, toxic, non-inflammable, chlorinated compounds called trichlorethylene and perchlorethylene. These solvents have no dissolving effect on shellac and some organic enamel finishes. This method of cleaning and removal of varnish requires specialized equipment and consequently is of little interest to textile mills.

CLEANING BY USE OF STEAM "JENNY". Some success has been achieved in surface cleaning by use of hot water under pressure. Portable steam "jennies" are available with special jet guns and nozzles to eject hot water vapor at 60 to 70 lb. (nozzle pressure). Such a device, outlined in Fig. 2, heats flowing water and ejects it in vapor form through a cleaning gun or nozzle under pressure. This method is efficient, particularly for removal of dirt, dust, mud, or chemicals. Attachments are available to feed so-called neutral soaps or solvents into the vapor stream. The soap emulsifies grease or oils present and makes them easily removable. The temperature of the water or soap solution should not be above 90° C. (194° F.), and the pressure at the windings not over 25 lb. per sq. in. Neutral soaps have little effect on the baked varnish film and insulation; however, the operation should be completed by a rinse in warm, clean water. This method is not an aid in coil removal, but cleans the surfaces for further repair, or varnish treatment.

CLEANING BY IMMERSION IN WATER. Electrical apparatus which has been

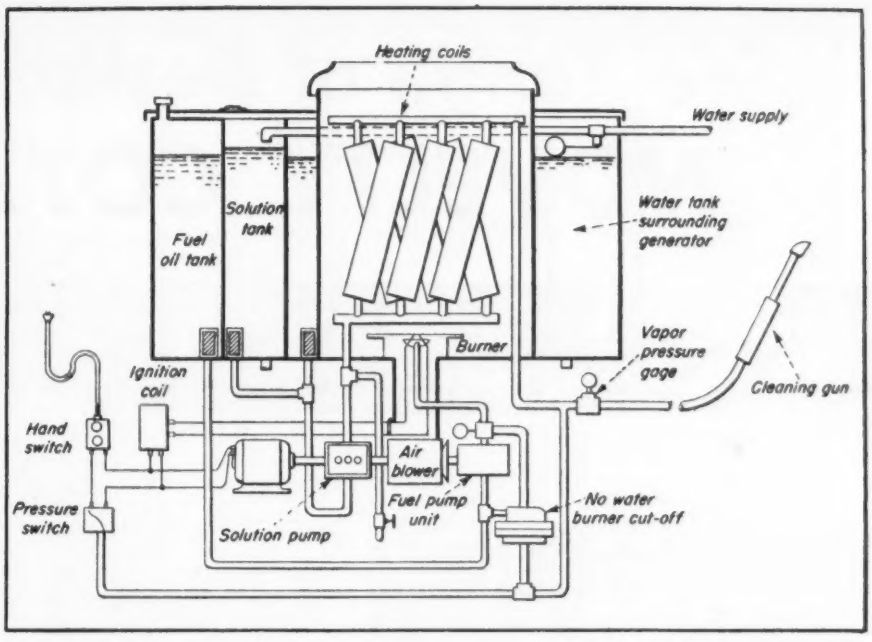

Fig. 2. Typical arrangement of parts in a steam "jenny". This type of equipment may be used to advantage where a mill has much cleaning to handle.

in flood waters and is clogged with silt and mud, Fig. 3, or equipment exposed to water-soluble chemicals, probably needs to be cleaned by immersion in water. Some chemicals to which modern electrical machinery is exposed are soluble in water and become embedded in grease as a hygroscopic slime. These can best be cleaned by immersing the dismantled parts in running water at 52-57° C. (125-135° F.), scrubbing the metal with brushes and wiping the insulation with lintless rags. After water immersion, the machines or parts may be given additional cleaning with a steam "jenny."

With any process where water is used on electrical windings, care must be taken to dry out the equipment slowly so as not to damage the insulation by formation of steam. There are three methods of drying winding insulation: (1) by internal heat, (2) by external heat, and (3) by combination of internal and external heat.

Shops where electrical machinery is maintained and repaired should have a forced-draft ventilated oven capable of reaching 135° C. (275° F.). This could be used for baking of varnish and the drying of machinery after

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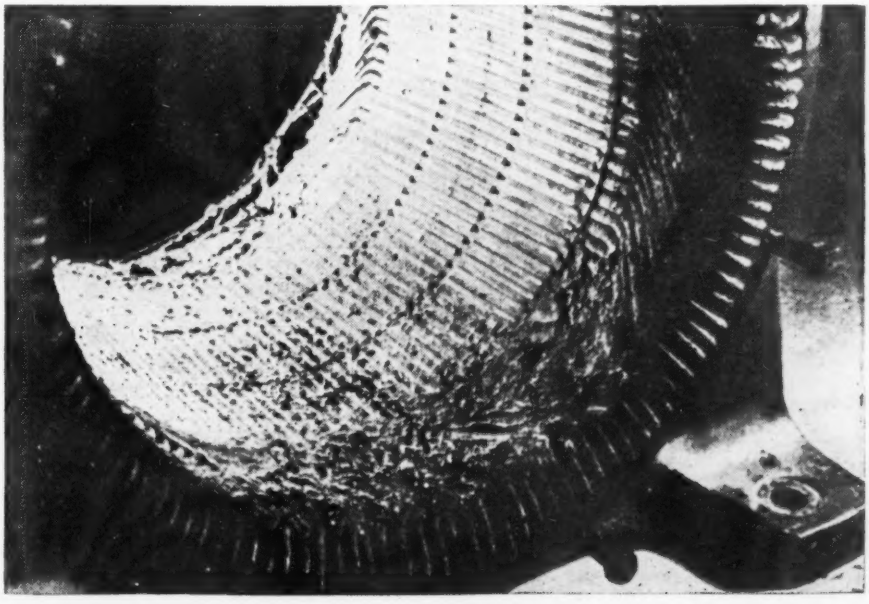
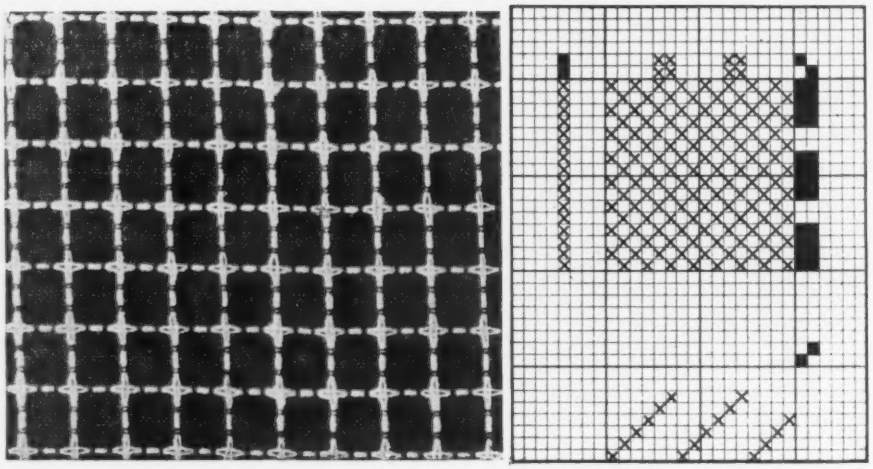


Fig. 3. Dirt accumulation in stator as result of being immersed during a flood. The thickest layers can be removed by immersion in warm running water and the rest removed with a brush.

Wide Range of Designs Used for NOVELTY COTTONS



HIGHLIGHTS: *Using different yarn colors and weave formations makes possible a great variety of novelty designs — Weaving data given for a number of fabrics—Two warp beams are required for most of the samples shown.*

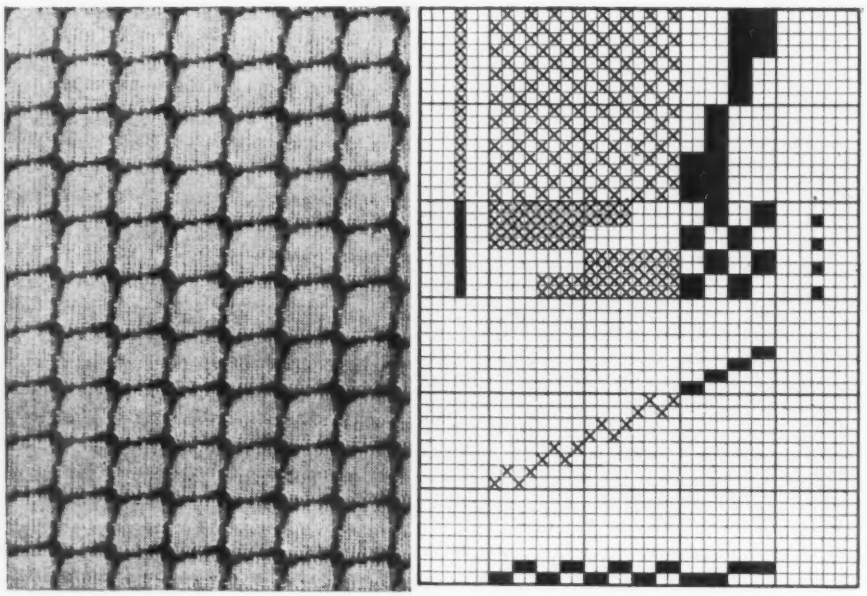
By T. R. HART

Professor of Weaving and Designing
Textile School, North Carolina State College

Textile designers are once more faced with the problem of producing fabrics for a civilian population that wants something new and different. There have been many predictions about fabrics of the postwar period, but one thing is certain—they must be attractive as well as serviceable. Therefore, it is advisable for designers to study every available novelty fabric for new ideas of color and weave formation. A few novel effects which no doubt will prove interesting to many designers are shown here. Some of them were developed in the Textile School of North Carolina State College, while others were accumulated from other sources.

Combination of Weaves Adds Novelty

In this fabric, the white ends and picks are grouped together, except where they weave plain while crossing each other. The plain weave causes a spreading of the white threads and adds attractiveness to the pattern. The white ends come from a separate beam because they contract less than the brown ends. The line at the left of the design shows how the filling is inserted. This fabric was woven with 60s/2 yarn, and its construction is approximately 68x68.

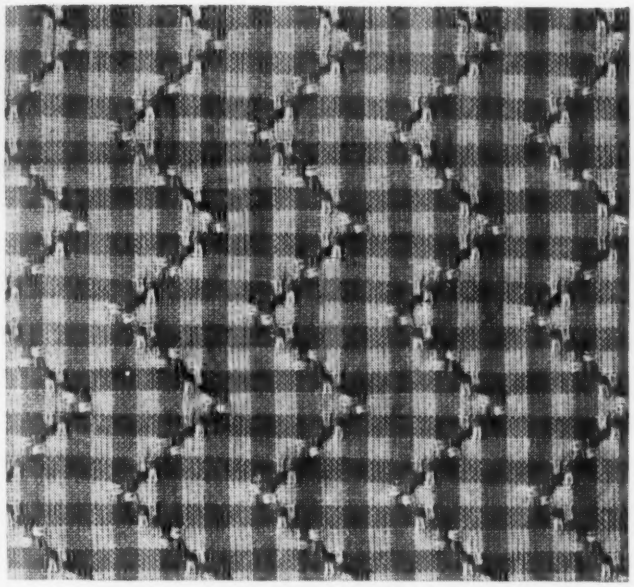


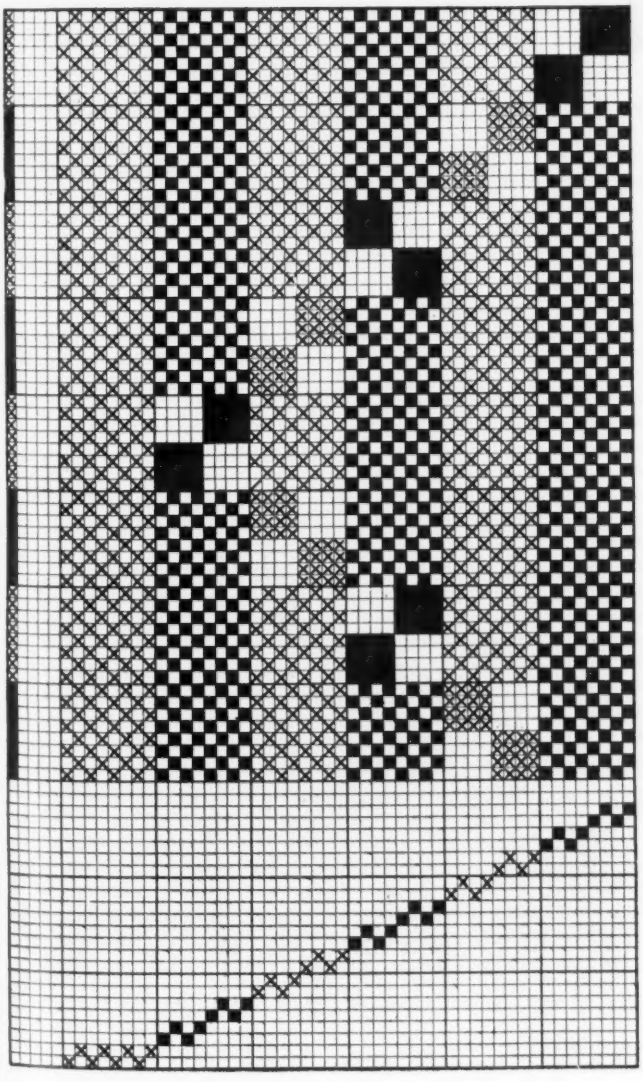
Distorted Pattern for Dress Goods

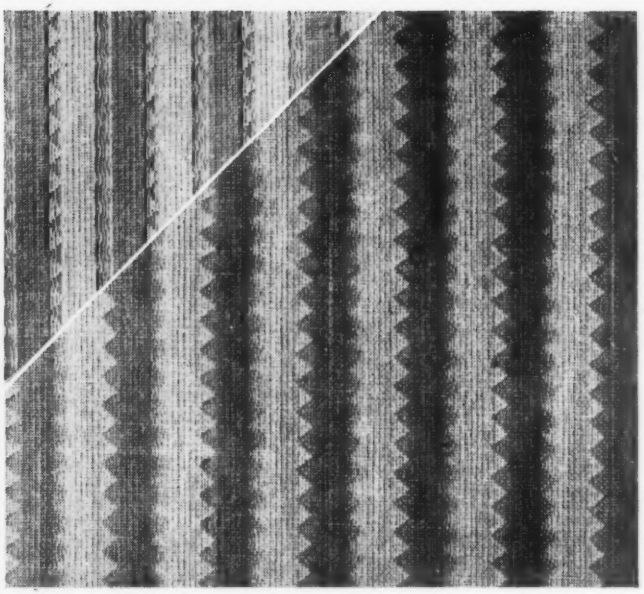
The method of interlacing the red ends and picks allows a certain amount of distortion which gives a good effect in the fabric. Two beams are required, as the construction of the red ends is considerably less than that of the white ends. It is also advisable to stop the take-up motion on every other red pick, as indicated at the right of the design. The fabric was made with 60s/2 warp and filling and woven with a 32-dent reed.

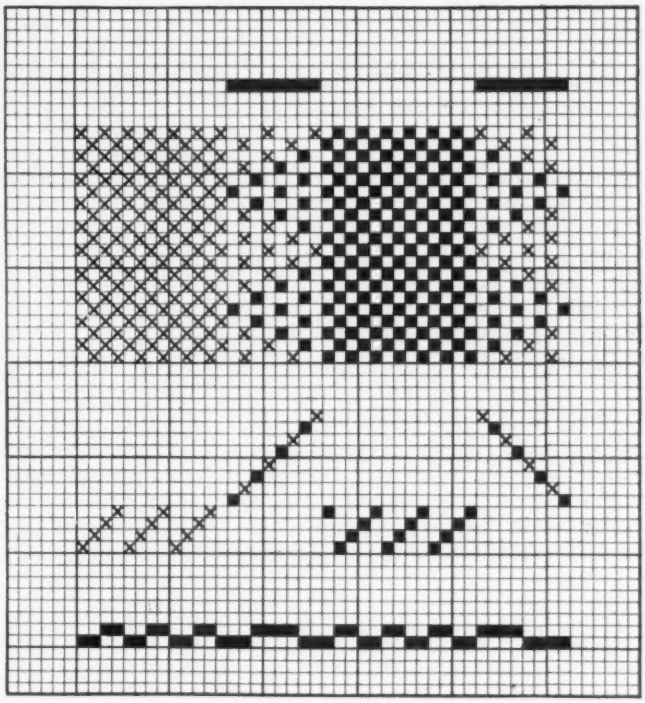
Zig-Zag Lines in Gingham

This fabric is warped and picked 8 white, 8 blue and weaves plain except where the warp and filling are floated to form the zig-zag lines that run lengthwise of the cloth. It was made with 60s/2 yarns, and the construction is approximately 68x68.









Half-Diamonds Between Stripes

In this fabric, alternate stripes of white and blue, consisting of 13 plain ends, are separated by eight extra warp ends arranged end and end and woven so as to form half diamonds at the sides of each stripe. The line above the design indicates the extra warp ends which should be placed on a separate beam. The warping plan for this fabric would be as follows:

Bottom beam

White	13
Blue	13

Top beam

Blue	1	1	1	1	1	1	1	1
White	1	1	1	2	1	1	1	

Because there is an odd number of plain ends in each stripe, the reed plan is somewhat unusual. The pattern illustrated was made with 60/2 yarn and drawn through a 32-dent reed.

WOOL SCOURING Aided by Sodium Tetraphosphate

HIGHLIGHTS: *Cape, Texas, and lime-pulled wools tested in laboratory and mill—Soap reduced 25 to 50%—Surface effect claimed responsible for improvement noted—Spectrophotometer shows whiter wool—Yarn strength increased 13.2%.*

By A. H. RAZEE
Rumford Chemical Works

TO ASCERTAIN the effect of sodium tetraphosphate in scouring wool, three basic types of wool were used: Cape, Texas, and lime pulled; all were 64s, clothing grade. In the work, Prof. Russell L. Brown at Lowell Textile Institute cooperated with the author.

Properties of sodium tetraphosphate and methods of preparing solutions for scouring wool appeared in the September issue of TEXTILE WORLD. Here will be described the actual scouring tests which indicate the more satisfactory ways in which this material can be used and the results which can be expected.

To insure fair results, as the bags were opened each of the wools was carefully laid down and hand-blended to make certain of uniform mixing, after which each was divided into two portions for the two contemplated scouring procedures. The scouring was done in a conventional Sargent four-bowl train, which differed from those in commercial operation only in size, the width of the bowls being two feet.

The exact capacity of the train is not known, but it is in the range of 300 to 400 lb. of grease wool per hour. This machine duplicates commercial scouring conditions in every way except that it lacks the highly specialized conductivity apparatus now used in some scouring establishments for the determination of alkali concentration. The scouring procedure adopted was that used by the institute in ite regular work, most of which is with wool for the woolen system, was adopted without change. Cape, Texas, and lime-pulled wools were scoured in that order to avoid contaminating the liquor with lime before running the cleaner grades.

The amount of soda ash in each of the scours was the same, since the mildly alkaline tetraphosphate is not a replacement for such economical source of Na_2O as sodium carbonate. Temperature in each bowl was carefully controlled with an accuracy of ±5° F. (using manually operated steam valves on three of the bowls, automatic control on the other), the rakes were operated at a constant speed, and the pressure on the squeeze rolls was unchanged during the run. Furthermore, after the bowls had been filled with water, charged with chemicals, and brought to temperature for each scour, approximately 50 lb. of grease wool were run to condition the liquors properly prior to scouring the principal part of the wool.

ONLY ONE CHANGE. The only significant change in the scour was, then, the inclusion of sodium tetraphosphate in the second scour, with an at-

TABLE I
Standard Conditions of Scouring

The capacity of bowls 1 and 2 is 600 gal. each, and that of bowls 3 and 4 is 400 gal. each. The temperature in bowls 1, 2, and 3 was held at 120° F., bowl 4 at 115° F. All bowls are of the same dimensions, but 1 and 2 are equipped with settling tanks. All bowls are equipped with thermometers and individual steam valves, but 2 has automatic control; others are manually operated.

Water
pH—6.77 (Beckman)
Alkalinity—41 p.p.m. (calculated as $CaCO_3$ determined by titration with N/10 HCl to the methyl-orange end-point. No alkalinity to phenolphthalein was found).
Hardness—36.9 p.p.m. (average of five samples, determined by APHA method).

Sodium Tetraphosphate
Commercial, bead form in cotton dissolver bags. (Dissolving time for 20% solution, 22 min. at 70° F.)

Soap
22° titre, 90% anhydrous flake.

Alkali
58% commercial light sodium carbonate.

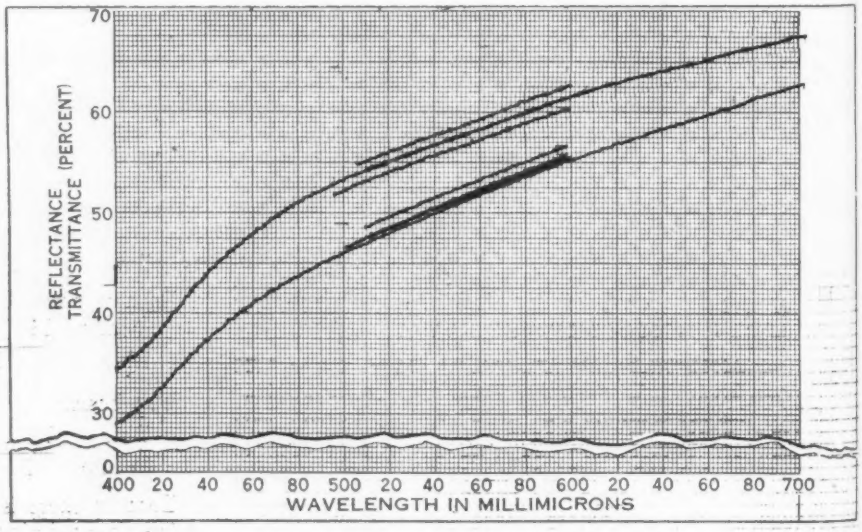


Fig. 1. Lower line of spectrophotometer curve is for regular-scoured Cape wool, upper is for the sodium-tetraphosphate scour and shows better whiteness.

tendant reduction in the amount of soap. In determining the ratio of tetraphosphate to soap, the author was guided by experience gained in solving a similar problem some years before. In this instance, it had been desirable to build a soap solution containing both soap and alkali with sodium tetraphosphate; but while soap economy was appreciable, ranging from 25 to 35%, detergency was inconsistent showing excellent whiteness in most cases, but exhibiting some impairment of efficiency against particularly heavy soil. In this application, the amount of soap used was governed by the amount of lather produced; and it was immediately apparent that in the presence of tetraphosphate a relatively small amount of soap produced a satisfactory lather, but the soap-alkali equilibrium was destroyed. That is, a reduction in soap consumption of 35% resulted in a corresponding alkali reduction; and when the initial charge of alkali had been accurately determined, it could not safely be reduced by 35% without some loss of detergency. This problem was studied rather exhaustively in the field; and it was found that in a single solution the inclusion of 10% sodium tetraphosphate, calculated on the original soap charge should be accompanied by a reduction in soap of approximately 25% to produce an unchanged alkali-concentration in the washing liquor.

MILL PRACTICE FOLLOWED. It is standard practice in wool-scouring establishments to carry separate solutions of soap and alkali in the interest of more flexible control. This was also the usage at the institute; and to demonstrate the effect of the phosphate upon soap consumption, the amount of soap was reduced by 25% for every 10% of tetraphosphate, based on the original soap charge in making up the soap solution. Fiske[6] proposed the dry mixture of sodium tetraphosphate with soap, citing a range of from 5 to 50% phosphate on the weight of the soap, with an optimum of 10% in soft to only moderately hard waters. Working with mixtures of these materials in solution, 10% tetraphosphate on the soap weight was tried. Additional work was planned with increased percentages of the phosphate and corresponding decreases in soap.

In the mill tests, the reduced-strength soap solution was used in the same volume as that containing the full amount of soap, disregarding the decreased soap content, thereby determining the economy produced by the use of the tetraphosphate. At the institute, each soap and alkali charge

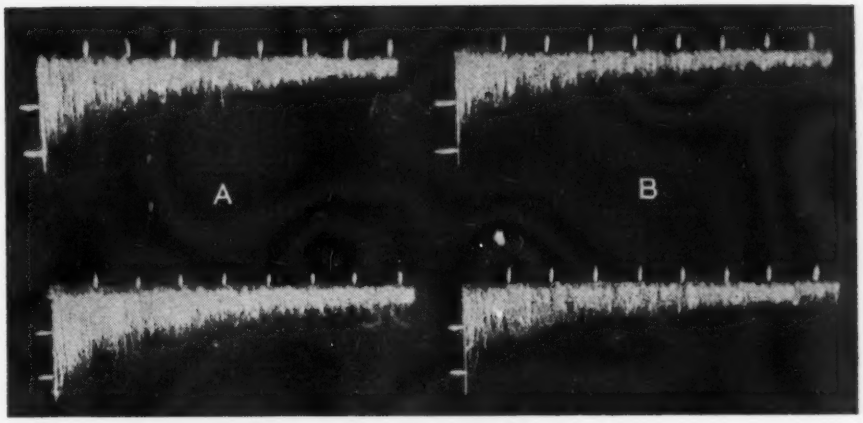


Fig. 2. Fiber diagrams are believed to explain increase in strength of wool A scoured with sodium tetraphosphate compared with conventionally scoured wool B.

TABLE II

A—Regular Scour

	Soap	Sodium Carbonate	pH(c) Start	pH(c) Finish	(d) %Na₂O	(e) Lather
Bowl 1	7 lb. 3 lb. (a)	14 lb. 5 lb. (b)	10.57	8.83	0.193	28 ml.
Bowl 2	5 lb. 2 lb. (a)	5 lb.	10.57	9.08	0.060	51 ml.
Bowl 3	4 lb. 4 lb. (a)	.....	8.30	7.86	0.0099	2 ml.
Bowl 4	.....	.....	7.05	6.71	.....	.....

B—Sodium Tetraphosphate Scour

	Sodium Tetra-phosphate	Soap	Sodium Carbonate	pH Start	pH Finish	%Na₂O	Lather
Bowl 1	11.2 oz.	5.25 lb.	14 lb.	10.55	9.03	0.159	30 ml.
Bowl 2	8.0 oz.	2.75 lb.	5 lb.	10.41	9.58	0.059	52 ml.
Bowl 3	6.4 oz.	3.00 lb.	.....	8.40	8.18	0.011	3 ml.
Bowl 4	.....	.....	.....	7.12	6.80	.....	....

(a) During an overnight shut-down in the middle of the run, bowl 4 leaked so badly that it was recharged. On starting up, additional soap and alkali were used in bowls 1 and 2 as shown. The soap used was a commercial 22° titre flake, 90% anhydrous.
(b) Bowl 1 was given an additional 5 lb. of soda ash after the shut-down. A commercial 58% light ash was used.
(c) pH determinations were made on samples at room temperature with the Beckman potentiometer with glass electrodes.
(d) Determined by titration with N/10 HCl to the methyl-orange end point and calculated as percent Na_2O.
(e) Determined by shaking 50 ml. of the liquor at 120° F. in a 100 ml. graduated cylinder and observing the volume occupied by the lather.

TABLE III

	CAPE WOOL		TEXAS WOOL		PULLED WOOL	
	Regular Scour	Sodium Tetra-phosphate Scour	Regular Scour	Sodium Tetra-phosphate Scour	Regular Scour	Sodium Tetra-phosphate Scour
First Petroleum-Ether Extraction	2.60% 2.60%	1.41% 1.34%	2.33% 2.54%	1.99% 2.54%	1.61% 2.00%	1.98% 2.24%
	av. 2.60%	1.38%	2.44%	2.27%	1.81%	2.11%
Alcohol Extraction	1.49% 1.05%	1.22% 1.04%	1.84% 1.94%	1.46% 1.85%	1.63% 1.88%	1.54% 1.89%
	av. 1.27%	1.13%	1.89%	1.66%	1.76%	1.72%
Second Petroleum-Ether Extraction	gain gain	gain gain	0.48%	0.12%	0.09%	0.12% .....
Total Extractable Material*	3.87%	2.51%	4.33%	3.93%	3.57%	3.83%
Commercial Extraction[1]	3.16%	1.26%	6.04%	1.61%	1.89%	1.69%
Reflectance[2] at 550 Mu	51.4%	57.5%	50.2%	53.7%	58.4%	57.7%

* Omitting values for second petroleum-ether extraction.
[1] With carbon tetrachloride.
[2] Average of 4 samples, G. E. Recording Spectrophotometer.

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One lubricating oil after another . . . but no improvement. That was the record of a mill whose looms were turning out rayon and acetate fabrics.

Oil dripped constantly from loom-bearings, so that spotty goods piled up. And in addition, floors in the weaving-rooms were slippery and soaked with oil . . . an accident- and fire-hazard combined.

What was needed—reasoned the Sun Engineer when he was called in—was an oil with exceptional adhesive qualities, one that would cling to bearings. He recommended a Sun textile lubricant especially prepared to stay put on bearings.

Three years later, a questioning of maintenance-men revealed they had had no spotting of fabrics since the Sun Oil was introduced, no dripping of oil, no messy floors. And with the oil staying on the bearings, looms were getting better lubrication with less oil.

These results are typical of the practical, down-to-earth service, offered by Sun Textile Engineers and Sun lubricants. More and more mills are having experiences like this, and are swinging to Sun products for lubrication, and for processing. Call the Sun man near you, or write . . .

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was weighed out. Both items were dissolved before addition to the bowls through the duckers. Solutions were made in jacketed kettles to avoid dilution by condensate, which would have been a problem if large tanks with open steam lines had been used. The tetraphosphate was dissolved to make a stock solution from which volume measurements were made in adding the material to the soap solution prior to its introduction into the bowls.

Pertinent data on operating temperatures, capacity of the bowls in gallons, hardness of water and the like, which were common to both scours, are given in Table I.

The regular soap and alkali scour was then run on all three types of wool under these standard conditions, using quantities of materials as shown in Table II, Section A. After draining and cleaning the bowls, they were recharged with sodium tetraphosphate, soap, and alkali as shown in Table II, Section B; and scouring was resumed.

OBSERVERS AGREE. As scouring proceeded, samples of wool were taken from the squeeze rolls of each bowl for visual examination, as were samples from the dryer. At the conclusion of the run, these samples were compared by a number of observers, who agreed without exception that the sodium tetraphosphate had produced a brighter, loftier wool of superior handle and odor. When these samples were later evaluated by a number of commercial wool scourers, they concurred in this opinion. One of these men remarked that the Cape wool with the tetraphosphate scour appeared to have been bleached, so great was its whiteness when compared with the same wool scoured in the traditional manner. Not only was the whiteness of the tetraphosphate-scoured wool of significant superiority, but it was also more open, softer, and loftier. This difference was so marked that several individuals correctly chose the tetraphosphate-scoured wools of all types solely by the feel and handle. It was also noted that the wools scoured with phosphate had little or no odor as compared with those scoured with soap and soda ash only. As evidence in support of this qualitative evaluation, Soxhlet extractions

(Continued on page 215)

Fig. 3. Left, unscoured wool; middle, regular scour; right, sodium-tetraphosphate scour

TABLE IV—Yarn Strength Test

Cape Wool—Regular Scour			Cape Wool—Sodium Tetraphosphate Scour		
No.	Grain Wt. 50 Yd.	Break Lb.	No.	Grain Wt. 50 Yd.	Break Lb.
1	60	64	1	56	72
2	60	69	2	58	70
3	62.5	69	3	62.5	82
4	63	76	4	61	80
5	63.5	75	5	62	79
6	63.5	73	6	61	81
7	64	72	7	62	79
8	64.5	76	8	62	79
9	63.5	73	9	63	86
10	63	72	10	64.5	82
11	61.5	70	11	58.4	79
12	61	69	12	58	75
13	61.6	68	13	58	73
14	62.3	64	14	57	70
15	63.3	71	15	59.6	71
Av.	62.5	70.7	Av.	60.2	77.2

Correct to 62.5 grain

$$\frac{(77.2)(62.5)}{60.2} = 80$$

$$\frac{80-70.7}{70.7} \times 100\% = 13.2\%$$

Sodium tetraphosphate scour 13.2% stronger.

TABLE V

First Scour

Bowl	Sodium Tetraphosphate	Soap	Sodium Carb.
1. Start	1 lb. 6 oz.	3.50 lb.	16 lb.
After 20 min.	11 oz.	1.75 lb.	8 lb.
Regular 20 min. additions (4)			20 lb.
Total	2 lb. 1 oz.	5.25 lb.	44 lb.
2. Start	1 lb.	2.50 lb.	6 lb.
After 20 min.	8 oz.	1.25 lb.	3 lb.
Regular 20 min. additions (4)	(after 80 min.)	0.50 lb.	8 lb.
Total	1 lb. 8 oz.	4.25 lb.	17 lb.
3. After 20 min.	13 oz.		
After 80 min.	6 oz.		
	4 oz.		
Total	1 lb. 7 oz.		

Second Scour, Part A

1. Start	3 lb.		16 lb.
After 20 min.			9 lb.
Total	3 lb.		25 lb.
2. Start	3 lb.		6 lb.
After 20 min.			3 lb.
Total	3 lb.		9 lb.
3. Start	3 lb.		
Total	3 lb.		

Second Scour, Part B

1. Start, liquor from	3 lb.		25 lb.
Part A, adding	1 lb. 8 oz.		10 lb.
After 20 min.			5 lb.
Total (cumulative)	4 lb. 8 oz.		40 lb.
2. Start, liquor from	3 lb.		18 lb.
Part A, adding	1 lb. 8 oz.		9 lb.
After 20 min.			5 lb.
Total (cumulative)	4 lb. 8 oz.		32 lb.
3. Start, liquor from	3 lb.		
Part A, adding	1 lb. 8 oz.		
Total (cumulative)	4 lb. 8 oz.		

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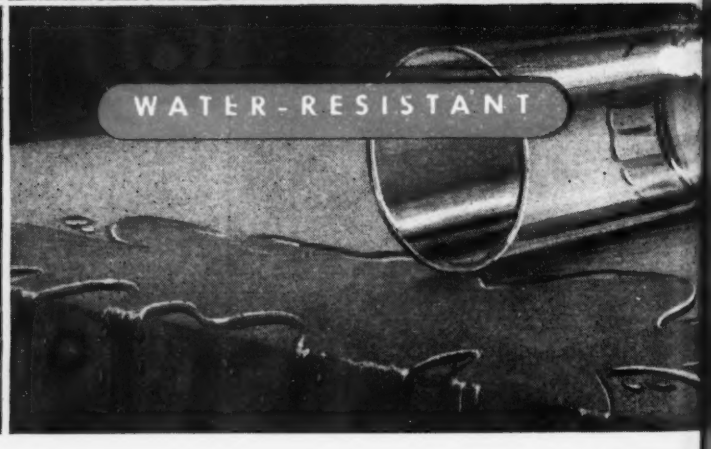

Vita-Clor **Finishes will make natural and synthetic fibres, or their mixtures**

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Army and Navy Extend Their JOINT TEXTILE BUYING

HIGHLIGHTS: *Unification of buying for Services will bring merging of some specifications—Open bidding to be resumed, but with negotiation feature if prices seem out of line—May buy some garments in completed form rather than supply fabric to cutters—Joint Army-Navy office now in New York.*

As soon as textile and clothing contract-termination activities are completed, the Army-Navy Purchasing Office, at 111 East 16th St., New York, will expand its operations. The Army is planning to bring in additional sections to the New York office to match the expansion planned by the Navy. This will follow the now established principle of having buyers of the same or similar commodities for both Services operating side-by-side.

The end of the war has brought no reversion to prewar government buying policies, but certain war restrictions on production will be abandoned as the nation's business approaches normal. More Army contracts will be placed wherein the manufacturer will purchase and supply his own basic materials rather than use the government-furnished materials, as set up under wartime procurement. This may eventually apply even to uniforms for which the government has been accustomed to buy fabric.

The open-bidding policy will be resumed, and the War Department will afford all qualified contractors an opportunity to submit quotations. Competitive bidding will be augmented to incorporate not only the systems in vogue prior to the war, but also to maintain certain developments which are the result of war experience. Where bids received show the effect of competition, the award will, in the usual course, be made to the low bidder. If the price review and comparison show a fair and reasonable price, no detailed analysis of estimated cost and no further negotiation will be needed. The War Department, however, reserves the right to award the contract by negotiation with any bidder and to reject any and all bids received.

As a result of the establishment of the Army-Navy Purchasing office in New York, efficiency and time-saving factors for both the Services and industry as a whole have been apparent. Recommendations have already been made for joint specifications on similar items used by both Services; joint policy on the issuance of government-furnished material; coordination of requirements to result in the purchase of like items for the same period of time; similar policies regarding negotiations and price redetermination; similar contract and purchase order forms; and reduced clerical staffs to handle contract drafting, issue, and modification.

The two principals at the Army-Navy Purchasing Office in New York. Left, Capt. Marshall W. Tuthill, U.S.N.; right, Col. Thomas W. Jones, U.S.A. Each is in command of that division of the purchasing office which represents his branch of the service.

PLAN FORMULATED DURING WAR. The plan to set up the joint Army-Navy textile and clothing procurement office was approved in January, 1945, by the then Under Secretary of War, Robert P. Patterson, and the Secretary of the Navy, James Forrestal. Its purpose was to speed the procurement of critically-needed textile and clothing items for both Army and Navy, and this involved seven phases:

1. To place Army and Navy purchasing officers in the same offices.
2. To locate contracting offices where the industry conducts its business.
3. To determine which items are adaptable to coordinated purchasing by one Service or the other.
4. To standardize specifications, inspection, expediting, and contract terms wherever possible.
5. To provide continuous interchange of information on all factors affecting the purchase of Army and Navy commodities.
6. To avoid duplication of effort.
7. To eliminate impact on the textile and clothing industry of cutbacks or termination of production by exchange of production facilities to fit schedules of the Army and the Navy.

In the three months before V-J Day, the Army alone had awarded textile and clothing contracts from this new office totaling more than $347,000,000 on eight commodities: cotton cloth, cotton garments, wool textiles, wool garments, rainwear and

(Continued on page 204)

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SOY-BEAN SIZE Is Easy to Apply and Remove

HIGHLIGHTS: *New protein product penetrates acetate well and withstands overheating—Use of softeners optional with prepared product—Proportion is ½ to 1 lb. per gal. for acetate; less for viscose.*

By I. G. SANFORD

SLASHING VISCOSE and acetate rayon with size made from soy beans differs but little from slashing when using gelatin, casein, or synthetic size. Some differences do exist, however, if the peculiar properties and advantages of soy-bean size are to be fully realized.

One of the first differences is noted when preparing the size solution. One soy-bean protein size (such as supplied by Specialty Products Co.) has all of the necessary ingredients (size, oil, penetrant, and preservative) incorporated into it so that only one material need be weighed and sifted slowly into about 60 gal. of cold water, assuming that a 100-gal. mix is being made. Of course, a size kettle employing stirring paddles should be used; and as soon as this size is thoroughly stirred, the heat can be turned on. A closed-coil or a jacketed kettle is preferred for heating. After the solution has reached 180° F. for not over 30 min., water can be added to bring the volume to 100 gal. (or whatever is desired), and the size solution can then be maintained at 155° F. for use.

Another difference noticed when using soy-bean protein size is that the first cylinder of the slasher need not be covered with cloth, as is the practice with other sizes. On a 5-cylinder machine, only the three middle cylinders need be covered; and, in fact, covering these is optional. On a 7-cylinder machine, the first cylinder and the last two can be left uncovered. Whether the cylinders are covered or not is not of extreme importance when using this kind of size, although some slight preference may be found, based on weaving results.

SOLUBILITY UNAFFECTED. Probably the most outstanding difference found

(Continued on page 202)

TABLE I. ACETATE WARP-SIZING FORMULAS

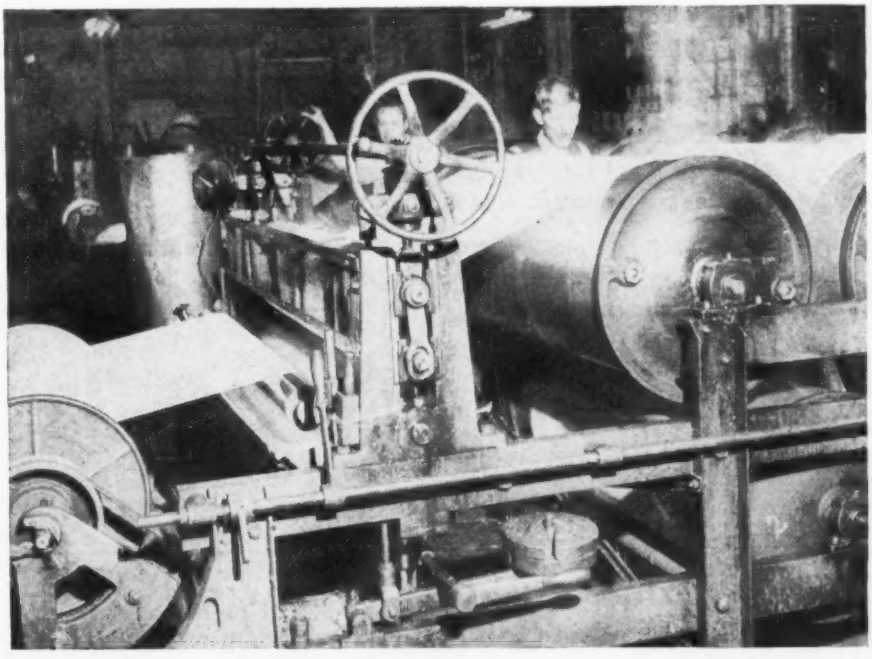
(Based on 100 gal. total volume)

Fabric and Denier	Protein Size	Softener (Optional)
SATINS		
45, 55, 75, 100 den.	90 to 100 lb.	18 to 22 lb.
150, 200 den.	80 to 100 lb.	15 to 20 lb.
TAFFETAS (Normal-twist filling)		
55, 75, 100, 120, 150 den.	50 to 65 lb.	10 to 14 lb.
TAFFETA (Crepe-twist filling)		
55, 75, 100, 120, 150 den.	80 to 90 lb.	10 to 20 lb.

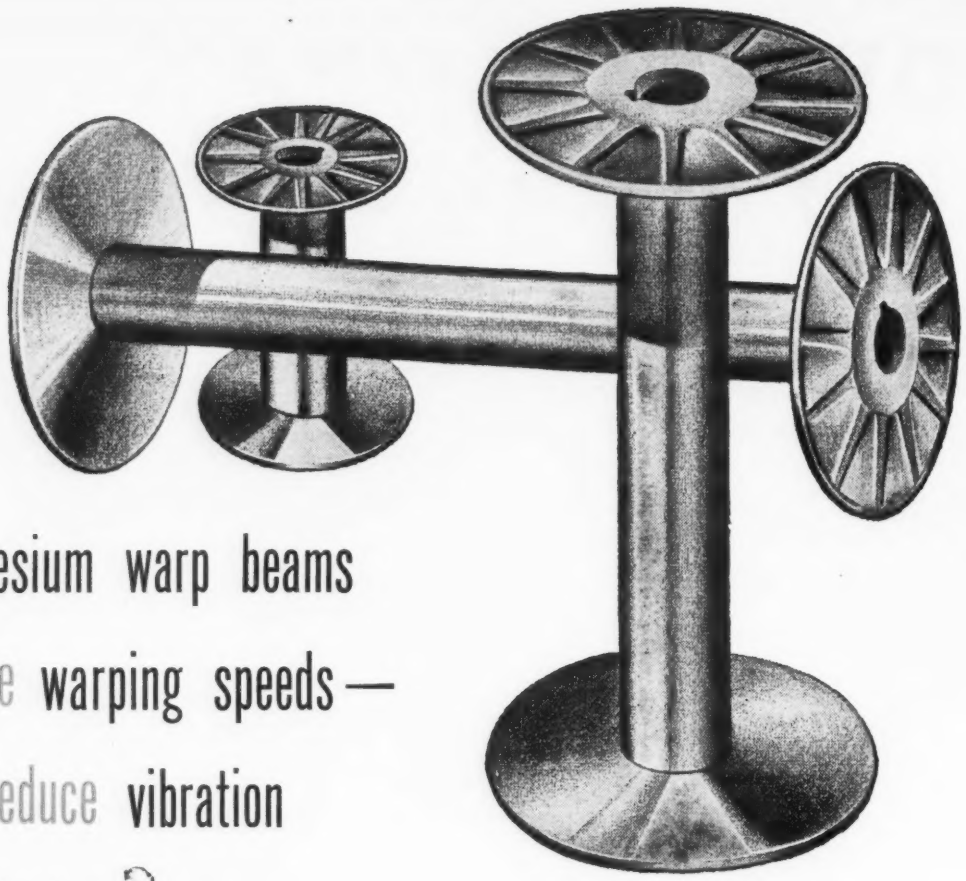
TABLE II. SLASHER-CYLINDER TEMPERATURES

(Surface temperature in °F.)

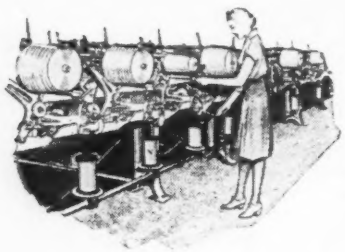
5-cyl. Slasher		7-cyl. Slasher	
Cylinder No.	Temperature	Cylinder No.	Temperature
1	190° uncovered	1	190° uncovered
2	220° covered	2	220° covered
3	230° covered	3	240° covered
4	220° covered	4	220° covered
5	190° uncovered	5	200° covered
		6	190° uncovered
		7	* uncovered
		* No heat applied	



When using soy-bean size, the first slasher cylinder need not be covered.



Magnesium warp beams increase warping speeds — reduce vibration



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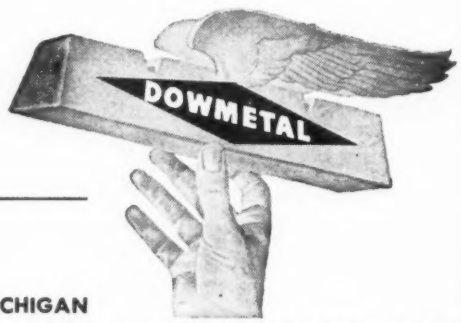

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Determining Yardage for FULL LOOM BEAMS

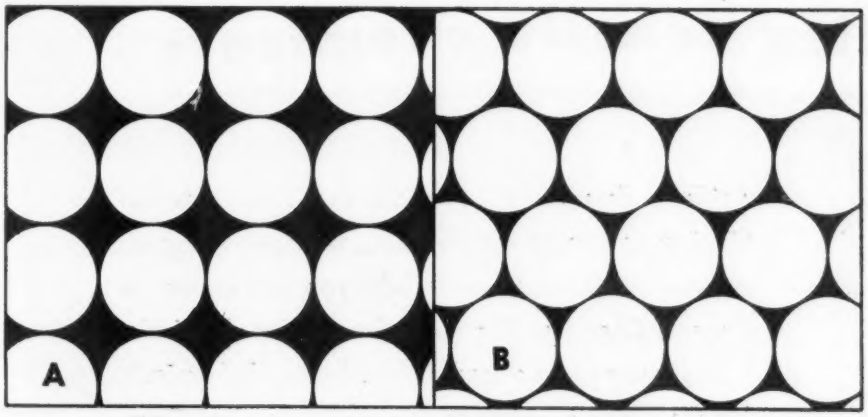

Fig. 1. Enlarged diagram shows two possible ways in which yarn lies when wound on loom beam.

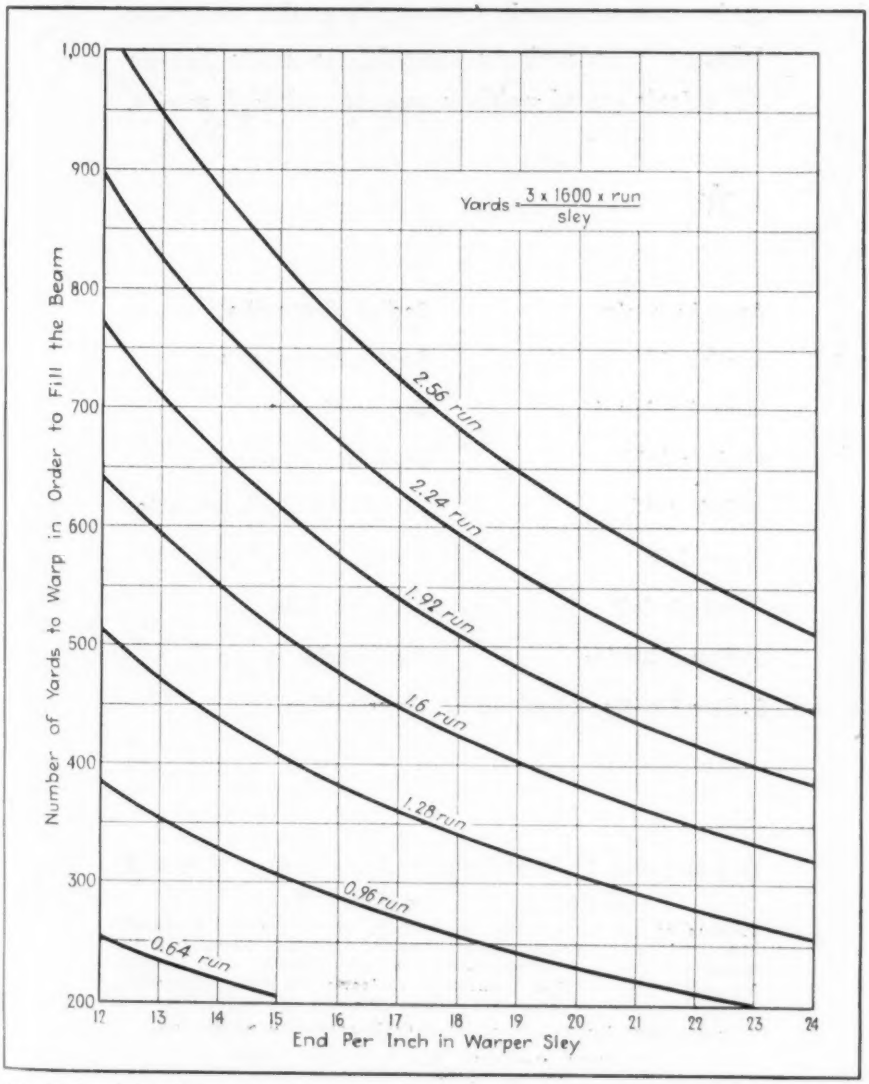

Fig. 2. Graph for determining the yardage of yarn to be wound on a beam to fill it level with the end plates. Beam has 4-in. diameter shaft and 17-in. diameter end plates.

HIGHLIGHTS: *Mill men may construct graph or nomograph to show yarn yardage necessary to fill loom beam completely for any given yarn count and sley.*

By GEORGE WAKEFIELD

FOR ANY GIVEN COUNT of warp yarn used in a cloth of a specified sley, what length of yarn must be warped so that the beam will be full of yarn and level with the end plates? If this question can be answered, much time, labor, and money can be saved through less frequent stops of the warper and less loom stops for tying in new warps. In this discussion, the yarn referred to is woolen, but the principles apply to other yarns.

If a certain count of yarn has previously been warped, it is probable that the boss warper will have some idea, based upon this experience, as to what length of a similar yarn he should warp in order to fill his beams. But if the particular count and/or sley is unusual, or if it happens to be a long time since a similar warp was made, it is likely that he will hazard a guess—or make an estimate, as the boss warper would term it.

DEVELOPING FORMULA. There are two ways in which, theoretically, yarn could be packed on a beam; namely, as shown in *A* and in *B* of Fig. 1. In the case of *A* there would be 21.5% of the beam space unoccupied by yarn; whereas in the case of *B* there would be only 9.3% of the beam space unoccupied. This relationship holds without reference to yarn size. Undoubtedly a wind of the type in *B* would more nearly approach a representation of actual conditions.

In practice, of course, the cross-sections of the warp threads would not be perfectly circular as depicted in the sketch, they would be somewhat flattened through the pressure

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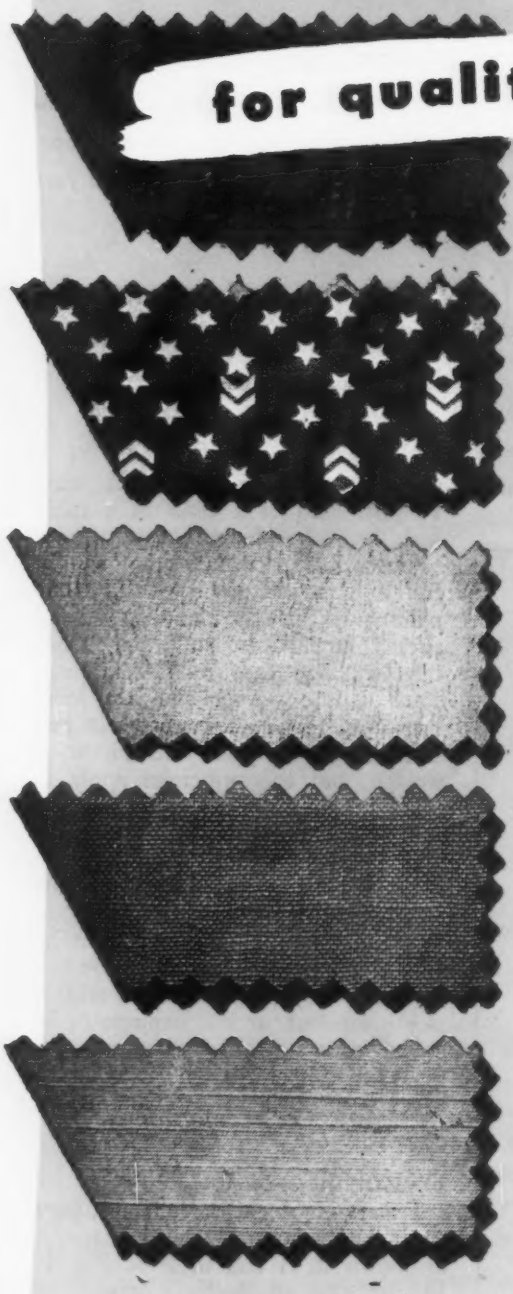

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exerted. But Fig. 1 does demonstrate that, irrespective of the counts or sley, but with other factors being equal, the relationship of yarn to unoccupied space is constant. Hence, the weight of a given sort of yarn per inch of width of a beam that is filled to the top of its plates ought to be invariable no matter what the counts or sley.

The length of yarn on a beam is a function of the sley, i.e. the ends per inch in the warper's reed; and is also a function of the count. For instance, if the sley was changed from 24 ends per inch to 12 ends per inch, the number of yards of yarn to warp a section would have to be doubled. And, likewise, if the count was changed from, say 0.64 run to 2.56 run, the length of warp would have to be quadrupled in order to obtain the same weight of warp on the beam.

APPLICATION. With a view to testing the theory that if beams are full to the top of their flanges the net weight of their yarn content is constant, irrespective of the counts and/or the sley, the writer weighed hundreds of beams containing warp varying between 0.96 run and 2.56 run; it was confirmed that the net weight is reasonably fixed. In this particular case it was discovered to be 3 lb. of warp per inch of width of the full beam.

Hence, with a sley of 12 ends per inch and 0.96 run, the number of yards which ought to be warped in order to fill the beam would be:

$$\frac{3 \times 0.96 \times 1600}{12} = 384 \text{ yd.}$$

And, in actual practice it was so. Accordingly, one may accept the equation:

$$\text{No. yd. to warp} = \frac{3 \times 1600 \times \text{run}}{\text{sley}}$$

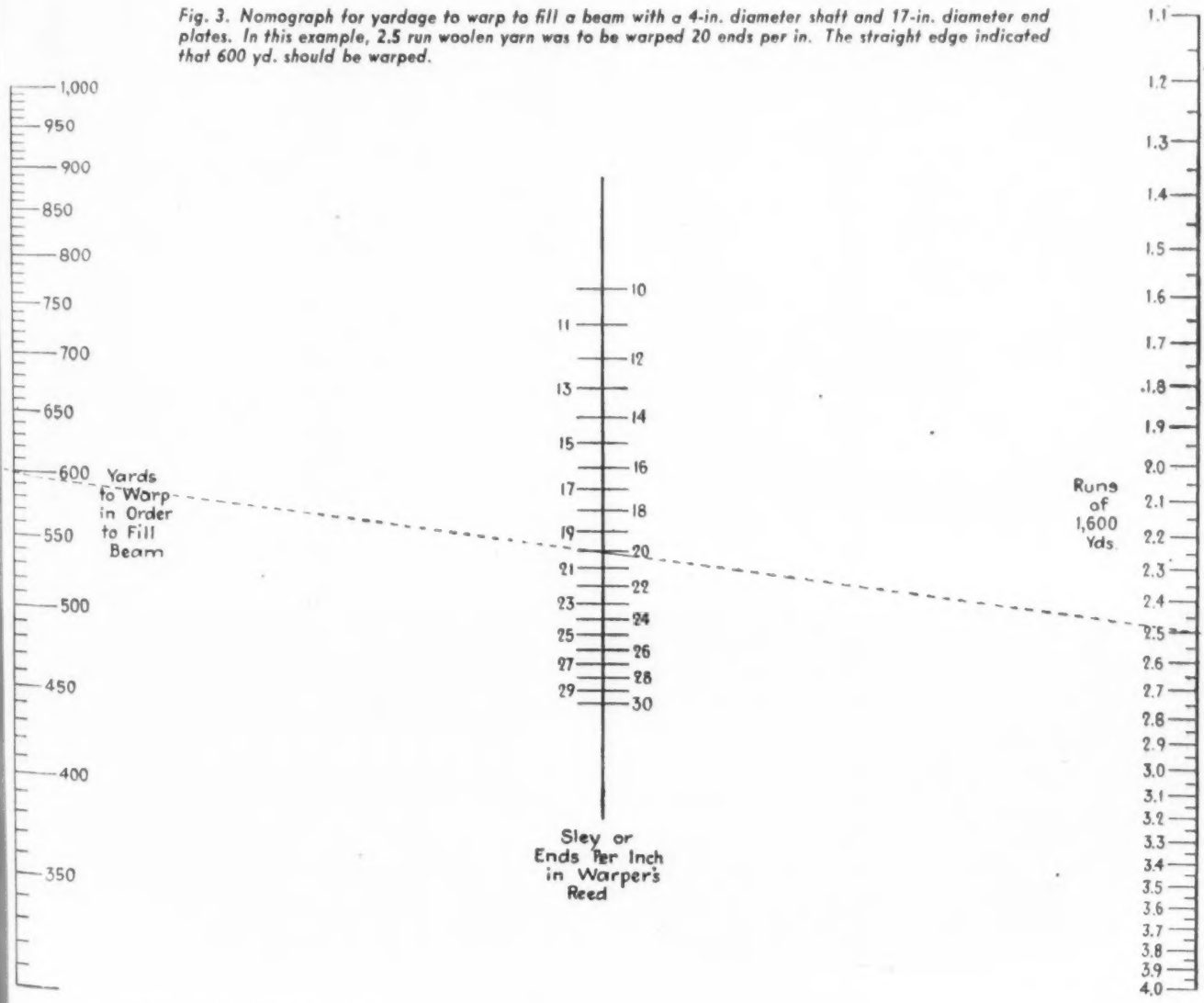
Fig. 2 illustrates graphs showing the length to warp for certain counts in various sleys; but, it is evident that for every different count of warp there will have to be a separate curve.

Consequently, a nomograph, Fig. 3, was constructed to simplify matters. By placing a straight-edge across the three vertical lines one may read off the number of yards to warp for any given combination of counts and sley, knowing that such a number of yards will fill the beam to the level of the plates.

Naturally, a boss warper will have to make his graph or his nomograph based upon his own particular data. The data in this article were for coarse woolen yarns on beams with 4-in. diameter metal base shafts which were built up with warp to an overall diameter of 17 in.

But once a boss warper has weighed a few of his full beams and determined the net weight of warp per inch of width between the plates (he must allow for the empty beam), he has only to substitute this net weight for the value of 3 in the formula, shown in Fig. 2, in order to provide himself with a basis for making either a series of graphs similar to those in Fig. 2 or a nomograph on the lines shown in Fig. 3.

Fig. 3. Nomograph for yardage to warp to fill a beam with a 4-in. diameter shaft and 17-in. diameter end plates. In this example, 2.5 run woolen yarn was to be warped 20 ends per in. The straight edge indicated that 600 yd. should be warped.



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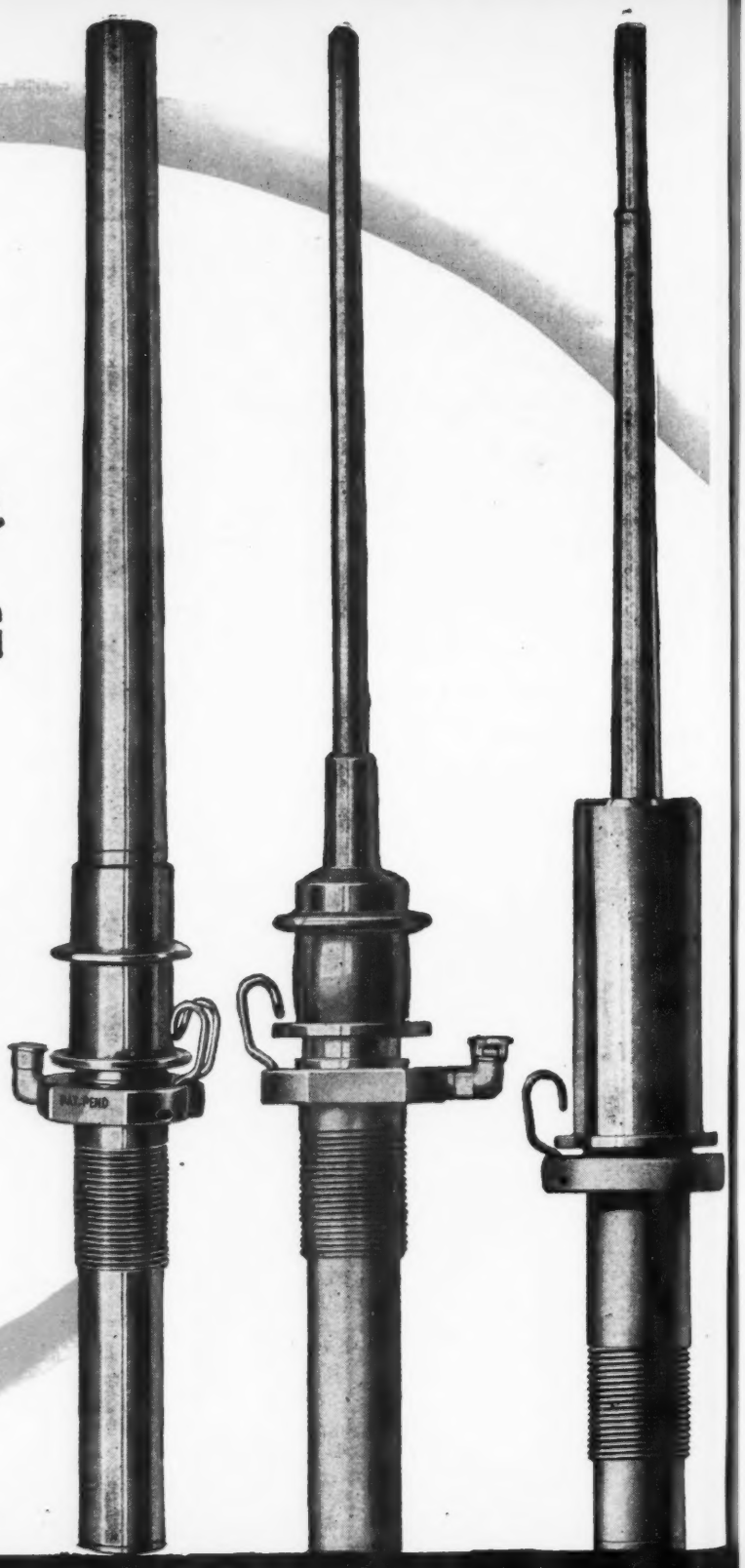

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Dyeing Techniques Can Minimize GAS-FADING of Acetate

HIGHLIGHTS: *New methods for dyeing acetate rayon aid in preventing gas-fading—Test procedure provides way to check color combinations and protective treatments—Present test now undergoing revision.*

By N. D. LOBAR

THERE ARE SEVERAL methods whereby dyes, other than those of the acetate group, can be applied to cellulose acetate rayons. In all cases, the successful application of these colors practically eliminates the problem of gas-fading. In addition, freedom from sublimation and improvement in resistance to light and washing may result.

From the time cellulose acetate made its appearance as a textile fiber, it has been known that a treatment with caustic soda or other strong alkali would saponify the fiber, rendering it possible to dye the saponified material with colors having affinity for cellulose. As far back as 15 or 20 years ago, this process was used for the printing of acetate fabrics. Vat colors, made up with potassium carbonate or hydroxide were printed on cellulose acetate, along with the usual reducing agent for the vat dyes. When the goods were passed through the ager, the acetate was saponified, creating affinity for the vat colors which dyed on the printed, saponified areas.

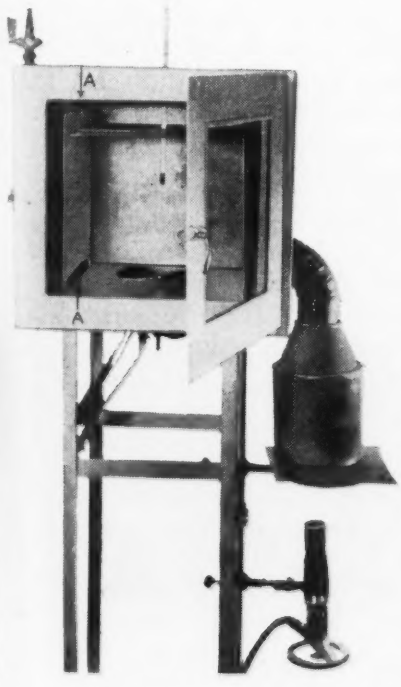
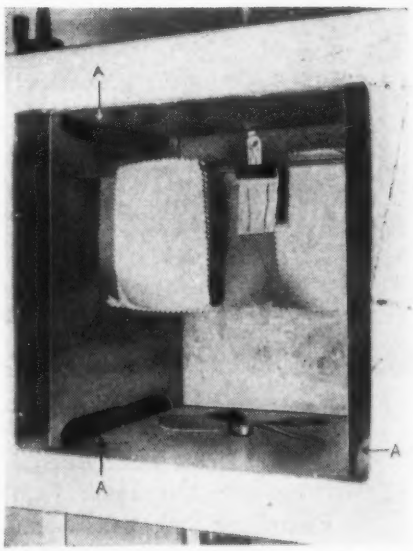


Fig. 1. Complete view of testing unit, showing burner, gas chamber, fan and baffles.

VAT-COLOR DYEING. Acetate fabrics can be piece-dyed with vat colors, following the pad-jig procedure so widely used on cotton goods, by employing the principle of saponification just mentioned. The cloth is pigment-padded, carried to the jig and given several runs in caustic soda at an elevated temperature. This treatment, carefully controlled as to alkali concentration, time, and temperature saponifies the acetate. Sodium hydrosulphite is then added and the dyeing proceeds in the usual way.

It is also possible to dye acetate rayon continuously with vat colors. Reduced vat dye is applied, followed by a passage through a conventional caustic soda and hydrosulphite booster at a high temperature. Varying degrees of saponification take place, depending on time, temperature and alkali concentrations. Another procedure makes use of alcohol as a swelling agent. The alcohol, usually one that is not too volatile, is added to the reduced color. Butanol is commonly used, though ethanol and isopropyl alcohol also can be employed as the swelling agent. In this method, soda ash replaces the caustic soda in the booster. Another variation is to pad on pigment color and reduce in a caustic-soda-hydro booster, with steam. A closed booster is used and the high temperatures obtained make saponification possible.



Photographs Courtesy American Association of Textile Chemists & Colorists.

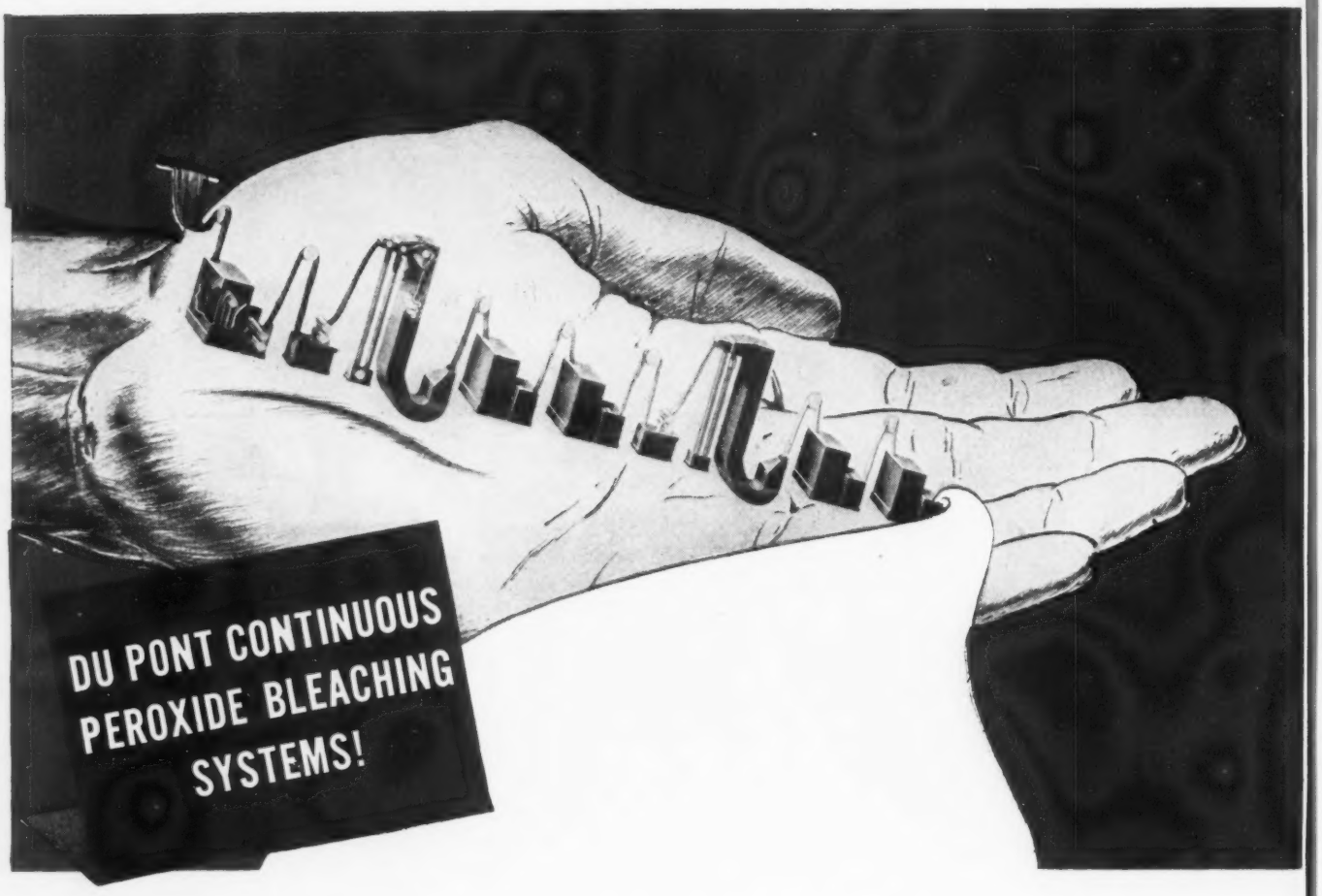
Fig. 2. Close-up of gas chamber with samples and standards suspended for test. Baffles for gas fumes AA on left.

While, chemically, all these processes are possible and have been run, most continuous machines are not too well adapted for the processing of acetate fabrics. Many of them were designed primarily to run cotton fabrics, and the tensions, speed ranges, and tendencies to wrinkle or crease in the

(Continued on page 190)

EDITOR'S NOTE: *This is the second of two articles on this subject. The first started on page 94 of the August issue.*

Controlled Bleaching to Requirements



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SEAM DETECTOR
Uses Electronic Relay

HIGHLIGHTS: *Limit switch mounted on calender detects seams of 0.007-in. additional thickness even at high cloth speed—Roll pressure relieved at proper instant and re-applied automatically after seam passes—Other uses indicated.*

By R. J. DE MARTINI
Textile Application Engineer, General Electric Co.

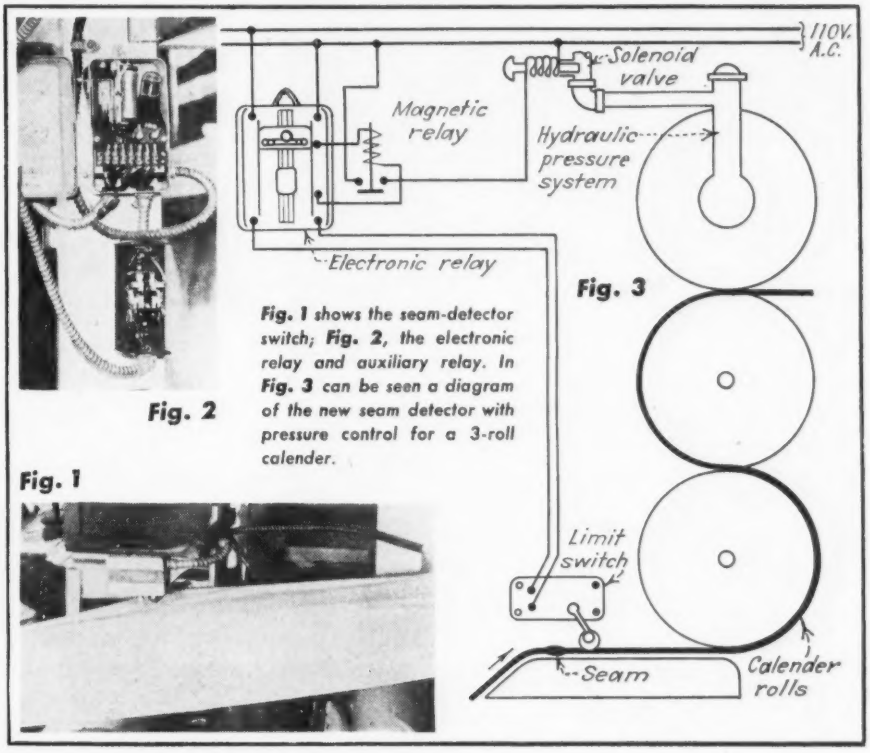

Fig. 3

Fig. 2

Fig. 1

***Fig. 1** shows the seam-detector switch; **Fig. 2**, the electronic relay and auxiliary relay. In **Fig. 3** can be seen a diagram of the new seam detector with pressure control for a 3-roll calender.*

A CALENDER OPERATOR becomes an expert when he can consistently demonstrate his proficiency in passing seams through the pressure rolls. Permitting a single seam to run through the calender with full pressure applied would be fatal to roll surfaces, yet the operator's margin of safety cannot be so great as to permit appreciable yardages on either side of the seam to pass uncalendered. Therefore, detecting seams and guarding pressure rolls against damage is usually a full-time job for the calender operator.

For many years, finishing plants have sought a device to perform this function automatically; and actually several successful mechanical and electrical seam detectors have been developed for handling cloth at speeds between 25 and 30 yd. per min.

What is probably the best of these detectors involves the application of a limit switch which is actuated by the seam as it passes under the feeler arm. This switch, in turn, operates a relay to actuate a solenoid valve in the top-roll hydraulic-pressure system.

ORDINARY RELAY MISSES. However, calenders are often operated at cloth speeds as high as 100 yd. per min., and at this speed seams move so fact that contacts in the limit switch are closed for only a small fraction of a second, and the relay fails to pick up. That is, the split-second interval during which current passes is not sufficient to permit energizing the coil of the relay. Hence the signal goes unheeded.

Industry is learning to turn to electronic tubes and circuits for the solution of various difficult industrial control problems. When a combination of sensitivity and dependability is the objective, as it is in the case of a high-speed seam detector, electronic control is demonstrating its value.

Thus, by combining a standard limit switch with an electronic relay, sure detection may be provided at speeds even in excess of 100 yd. per min. Going a step further and incorporating in this relay an adjustable time-delay feature takes the guesswork out of timing the pressure release. Then, tending a calender ceases to be a skilled occupation. Anyone in the finishing room can operate the machine.

IN MILL USE. There has been developed in actual mill operation just such equipment, which employs a precision limit-switch and a new electronic relay (Figs. 1 and 2). Seams adding as little as 0.007 in. to over-all cloth thickness, and traveling at 100 yd. per min., instantly set this relay into action. The contacts of the relay close and remain closed while the roll pressure is automatically released. Then, by reason of the time-delay feature, the contacts open and pressure is immediately applied after passage of the seam. The operator need not even be in the room.

The operation of this detector is illustrated in Fig. 3. When the seam arrives, it deflects the arm of the limit switch and closes its contacts for an instant. The electronic relay acts instantly to pick up the magnetic relay and operate the solenoid valve. Pressure on the calender rolls is relieved for a predetermined interval. At the end of that interval, the relay drops out automatically and pressure is re-applied to the rolls.

Similarly, this equiment could be applied to stop or reverse a motor, operate a warning light, or operate a counter upon the arrival of a seam on dye jigs, automatic shears, folders, and inspection and measuring tables. Many other uses are possible.

Alone, this equipment will interrupt non-inductive loads of one ampere or less, and, coupled with standard magnetic relays, will control loads of any magnitude.

In any case, the electronic relay introduces a new, high level of sensitivity and speed of response; and it makes available the time-delay feature which is so often desirable.

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Fine ARALAC FIBERS Aid Blending With Cotton

HIGHLIGHTS: *Diameter of new Aralac fiber compares with that of short-staple American cotton — Wool-like fabrics are now possible at lower costs—Blending may be done at one of three points in the cotton-cleaning process—Humidity control is more important when running Aralac than when running cotton.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

THE PRODUCTION of an Aralac fiber of 15 microns in diameter gives new impetus to blending this wool-like fiber with cotton. Since short-staple American cotton averages 15 to 17 microns in diameter, blends of cut Aralac staple and cotton can be processed on cotton machinery with few adjustments subsequent to the opening and cleaning process.

Having a great resemblance to wool, Aralac fiber in the new diameter offers possibilities for weaving blended fabrics which possess modified properties of wool but whose raw-material cost is considerably under the cost of wool.

The problems posed by blending Aralac with cotton are the same as encountered in mixing any synthetic fiber with cotton—namely, the synthetic fibers are clean and the cotton fibers are not. Hence, a mill going into production of blends must determine a method of mixing the two fibers consistent with the limitations of its own manufacturing facilities.

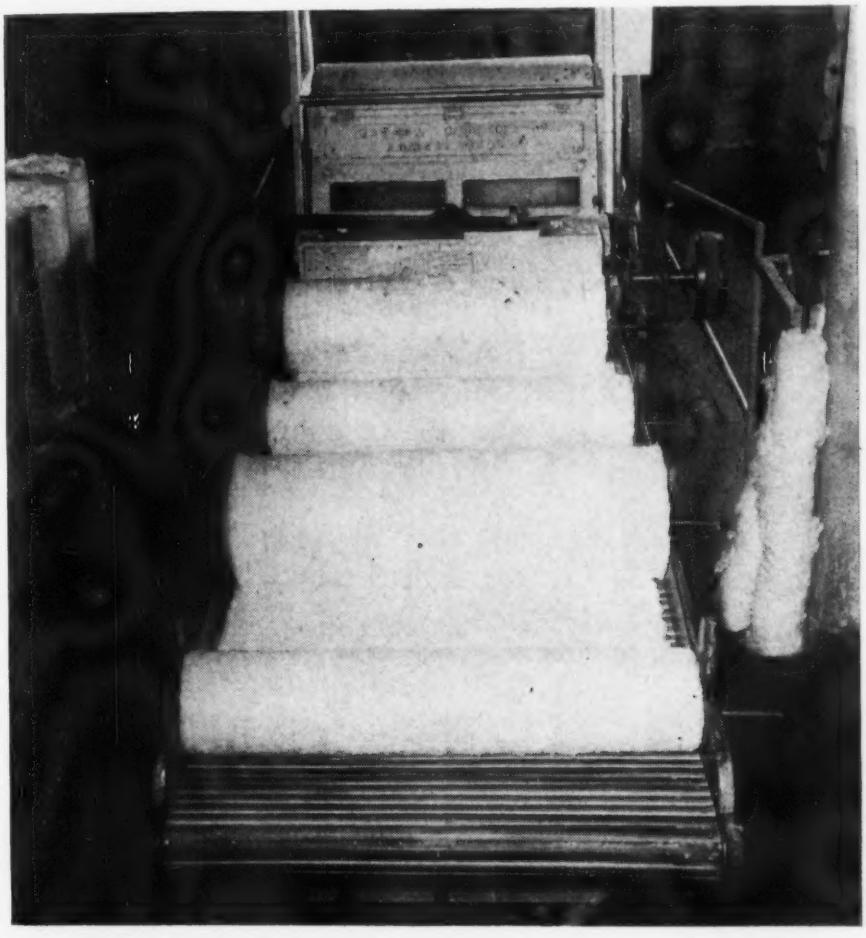
Since the price of Aralac is approximately three times the price of cotton, the first question to be answered by a mill is the point of the cotton-cleaning process at which the Aralac can be introduced without losing a substantial amount of the fiber in later processes. This point will depend largely upon the grade of cotton being used and the amount of cleaning done in the opening room.

For a more uniform blend, the Aralac itself should be put through an opening process prior to blending to mix the fibers of several bales and to allow them to adjust their moisture content to opening-room conditions. The opening machine should be adjusted so that a minimum of fiber is lost.

METHODS OF BLENDING. Blending is usually done at one of these three machines in the picking and carding processes: (1) the finisher picker, (2) the one-process picker, and (3) the drawing frame.

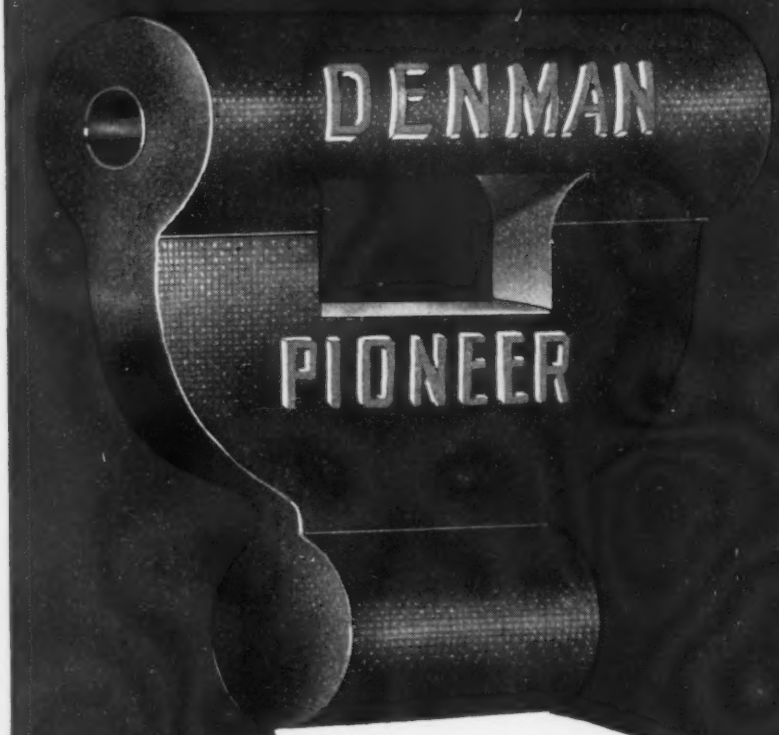
1—Finisher Picker. If a mill is using two or three processes of picking, the usual method of blending is to make cotton laps and Aralac laps and mix them in the desired ratio on the finisher picker. If the cotton used is not clean when it reaches the finisher picker, it is run by some mills through additional picking processes before combining with Aralac.

(*Continued on page 197*)



One place for blending Aralac with other fibers is on the finisher picker. The laps are tinted for fiber identification.

Positive Uniformity



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GERMAN TEXTILES
Relied Heavily on Synthetics

HIGHLIGHTS: *Machines and methods for handling disclosed by U. S. technical investigators—Experimental plant matched day and night lighting—Metallic card clothing in flexible base, vacuum frame cleaning, synthetic roll covering, water-cooled electric motors, and new commercial synthetic yarns among items found.*

Textile team submits first report on German textiles

To date, over 40 textile investigators have been sent to Germany for collection of technical and research data relating to every phase of the German textile industry, according to Lt. Col. Stephen J. Kennedy, Chief of the Textile Section, Research and Development Branch, Office of the Quartermaster General. Col. Kennedy is also the steering member and acting executive secretary of the textile sub-committee of the Technical Industrial Intelligence Committee (TIIC) which sent the 40 observers.

The summary presented here is taken from preliminary reports of six technicians whose "Team Report," a 1000-page volume, is now being printed. Names of the six and the subjects on which they reported in New York on Oct. 2 follow:

Joseph P. Meierhans, J. P. Stevens & Co., "Organization and Research in Germany."

M. E. Heard, West Point Mfg. Co., "The Zellwolle Lehrspinnerei at Denkendorf."

John F. Hagan, Callaway Mills, "German Methods for Utilizing Unretted Flax and Hemp as a Textile Fiber."

Werner Von Bergen, Fortsmann Woolen Co., "Woolen and Worsted Industries in Germany."

Frank S. Richardson, Waldrich Co., "An Investigation of the Textile Dyeing and Printing Industry in Germany."

Lloyd L. Leach, E. I. du Pont de Nemours & Co., "German Manufacture of Continuous and Staple Fiber and Related Products."

Copies of preliminary and full reports can be obtained from the Office of Publications Board, Department of Commerce, Washington 25, D. C.

GERMANS, forced to use synthetic fibers on conventional cotton and wool machinery, came up with some novel manufacturing ideas, according to initial reports from textile investigators who started ferreting out information ten days after VE Day. Some of the most advanced ideas came from a German government experimental plant at Denkendorf which, evidently, had a four-fold purpose of improving machinery, techniques, raw material, and building construction.

In the plant were found the several types of insulation for floors and walls, a unique saw-toothed roof construction, excellent interior lighting, various types of materials for walls, and a composition floor which seemed to offer the best possibilities for textile work. The entire plant was completely air conditioned, and every type of material-handling device was installed so that other German mills could observe and study these factors as well as the production equipment and processing methods.

SPINNING RAYON STAPLE. Following is a brief summary of what the Germans considered the best method of processing rayon staple. One bale breaker fed stock into conditioning bins where it remained for 24 hr. or longer to condition and bloom. The stock was then put on a long feed apron with two bale breakers in tandem, hooked onto a picker with one Kirschner beater. The first two or three grids were removed under the Kirschner beater in order to throw out any lumps or heavy particles that would cause neppiness later on. A small plate inside the picker between the Kirschner beater and the condenser cages slightly reduced the width of the lap and gave much better edges to the finished lap. The weight was reduced on the calender rolls to about 180 kilograms (396 lb.).

Four types of cards were set up in the plant, and about the only change here was that every second or third flat had been removed and a smooth plate inserted instead of the flat. New lickerin teeth had been developed and a new long-nosed feedplate. Three types of wire were used for card clothing; namely, regular card-clothing wire, metallic clothing, and metallic clothing embedded in a fabric or rubber base. This last type seemed to be the most desirable, as it gave a certain degree of flexibility to metallic clothing that was not obtained when straight metallic wire was wound on the cylinder. The plant had adopted a speed of about 10 lb. per hr. on the cards, and the webs were excellent. They seemed practically free from any trace of neppiness.

Two processes of drawing were used and eight ends up run on all drawing. Attention was paid to uniformity of trumpet sizes on both cards and drawing, and there appeared to be no major change from conventional drawing processes Two processes of roving were used, and the bobbins on the front row of flyers were marked and kept separate from those on the back row. A small plastic cap with a slot on top was inserted on the top of the front row of flyers in order to make the twist run up to the bite of the roll better than it would ordinarily do. The Reiter fly frame was preferred, but with straight-line cones and the bolster gears enclosed in a cast iron box the length of the frame, running in a film of oil.

Of the major types of spinning installed in this plant, the "Penderwalsen" developed by Bernard Bisinger and a Mr. Stahlecker, seemed to be the best. Drafting consists of a self-weighted back roll about 2¼ in. in diameter and weighing about 2400 grams, with the two front rolls hooked together firmly with a connecting bar that had a circular piece of metal fitted to the end nearest the back roll. This circular piece fitted into a round slot in a new type of roll stand, and no matter what sidewise pull was exerted on the front roll, the two front rolls always swung back in a true parallel position. The two front rolls were ball bearing, and plans called for the self-weighted back roll to be ball bearing. It is claimed that this type of system eliminated a great deal of the cleaning and oiling on the spinning frame; and since the rolls may be lifted out easily and quickly, the changeover of a frame to a roll setting was very simple and accurate.

CLEANING DEVICE. The Germans had an excellent air-suction device for the

(*Continued on page 206*)

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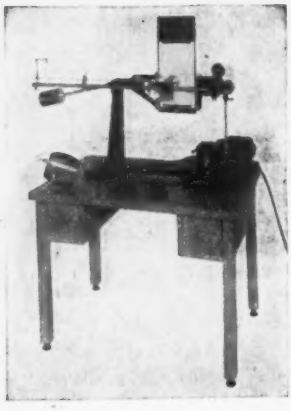

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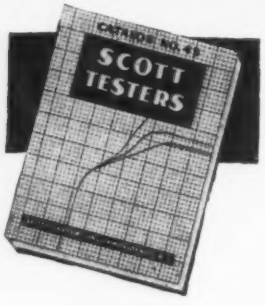

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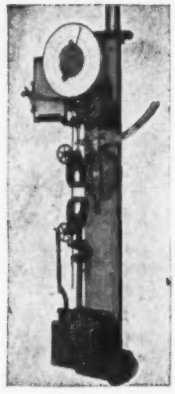

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PACKAGE-DYED CLOTH
Achieved by British

HIGHLIGHTS: *Ribbons, webbing, and wide cloth handled on package-dyeing machinery—Classification of dyes was prerequisite — Variation found in crease-proofing finishes also disclosed.*

Textile World Staff Photo

W. Penn, C. Wilcock, and Dr. H. A. Thomas (l. to r.), three Courtaulds technologists, examining a piece of wide fabric that was dyed in roll form in a package-dyeing machine.

FABRIC CAN BE DYED in roll form as an outgrowth of package dyeing of yarn, according to Dr. H. A. Thomas, of Courtaulds, Ltd., who spoke before a special meeting of the American Association of Textile Technologists in New York on Sept. 25. At the same meeting, W. Penn and C. Wilcock, also of Courtaulds, spoke on dyeing Rayolanda and Fibro.

According to Dr. Thomas, the three main points desired in package dyeing are: (1) dyeing control—which involves the selection of dyestuffs and the use of appropriate conditions, including adjuvants in the dye liquor; (2) satisfactory form of package—uniform, but not tight, otherwise there is a poor flow of liquor; and (3) good flow of liquor (flow is more important than pressure).

CLASSIFYING DYES. A proper classification of dyes is necessary for proper package dyeing, especially if more than one color is used in a bath. One practical classification for direct colors involves three grades, as follows:

"A" dyes—those which exhaust rapidly in the absence of salt and which possess good levelling properties. Typical examples of this class are Pontamine Fast Black LN, Diazol Light Yellow N4J, Rigan Sky Blue G, Benzanil Fast Bordeaux 4BL.

"B" dyes—those which exhaust slowly and slightly in the absence of salt and which possess poor levelling properties. Examples of this class are Solar Yellow 2R, Solophenyl Red Brown, Pontamine Fast Orange EG, Chlorantine Fast Blue GLN.

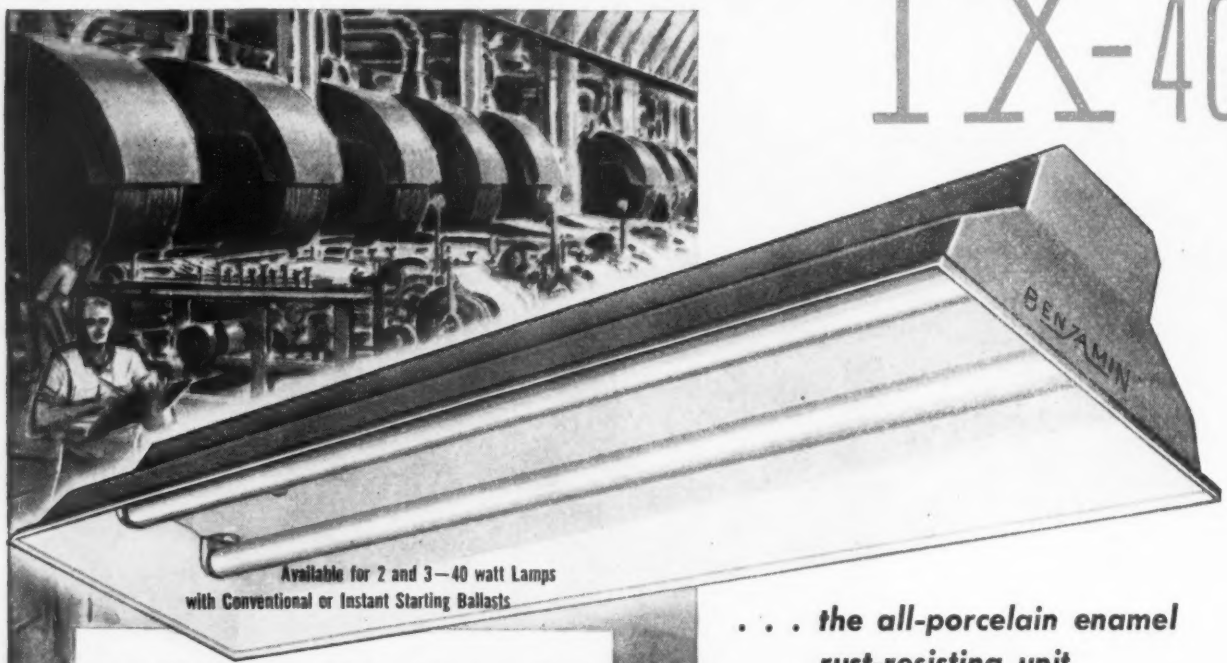
"C" dyes—those which exhaust rapidly and almost completely in the absence of added salt, but which also possess poor levelling properties. Examples of this class of dyestuffs are Benzopurpurine 4B (180% concentrated), Chlorazol Blue B (525% concentrated), Diphenyl Brilliant Blue FF (165% concentrated).

Vat dyes are classified by the manufacturers into weak and strong alkali, according to the amount of caustic alkali which is employed in the dyebath. A further classification is made on the basis of rate of exhaustion and levelling. This can be done by the strike test devised by Mr. Wilcock. One skein of viscose rayon is entered into the vat and a second skein entered one minute afterwards; dyeing is then continued and the two skeins developed in shade after five minutes at the appropriate temperature of dyeing. Knitting in alternate panels from both skeins is a critical test of the strike difference. A further series of dyeings started at the same time as the five-minute dyeing and made up from the same bulk vat liquor indicates the length of time required in order to bring the two skeins to the same depth of shade; this, of course, indicates the levelling properties. A strike index is thus determined for each vat dye.

Strike index A5 indicates that the two skeins were equal in depth of shade after five minutes of dyeing; B40 indicates an appreciable strike difference

(*Continued on page 224*)

Humid, Damp and Dusty Locations call for this new one-piece Fluorescent Lighting Unit .... the new "TX-40"



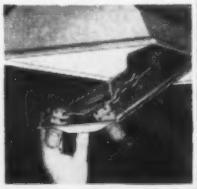
Available for 2 and 3—40 watt Lamps with Conventional or Instant Starting Ballasts

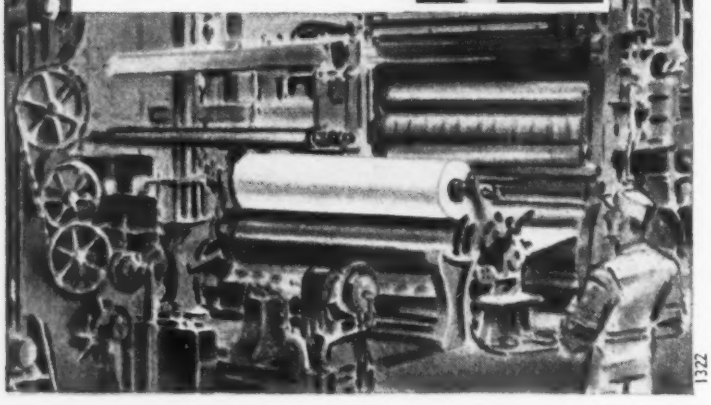
"Type TX-40" Embodies All the Advantages Found in All BENJAMIN FLUORESCENTS

- √ Benjamin Life-Time Porcelain Enamel
- √ Built-Like-A-Battleship Construction
- √ Easier Installation and Maintenance
- √ Certified Conformance to highest illumination, mechanical and electrical standards and specifications.

PLUS—

- √ SPECIAL RUST RESISTING HOUSING. Entire exterior of unit is single coated with gray porcelain enamel over a ground coat for extremely high resistance to rust. Inside section porcelain enameled with two white coats over a ground coat.
- √ ONE PIECE REFLECTOR HOUSING for durability and long life.
- √ REMOVABLE PORCELAIN ENAMEL STEEL PLATE on which control equipment is mounted forms the reflector top; removable by releasing two screws for easy wiring or inspection of ballasts.





1322

. . . the all-porcelain enamel rust-resisting unit.

Rust and other problems due to humidity and dust meet their master in the new Benjamin "Type TX-40." Now, even the most humid locations can be economically provided with fluorescent illumination through lighting units especially designed and constructed for such purposes.

"Type TX-40" Fluorescent Lighting units have wide applications in textile mills, paper mills, food plants, laundries and other process industries. In these locations the one piece all porcelain enamel construction of the "Type TX-40" unit provides durability and long life operation not possible with ordinary units. For complete data on these units and other Benjamin Fluorescent equipment . . . ***write Benjamin Electric Mfg. Co., Dept. E E, Des Plaines, Ill.***

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LIGHTING EQUIPMENT
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Doffer's Load Lightened by BOBBIN LIFTER

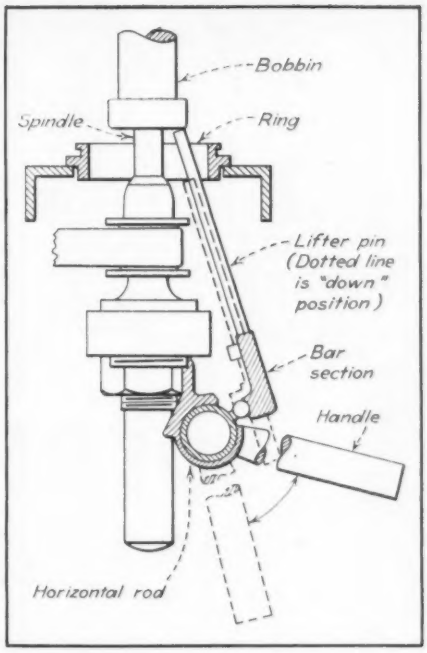
HIGHLIGHTS: *Grip of spinning bobbins on spindles broken prior to doffing—Mechanism developed for Monarch Mills by Callaway Institute—Less energy input required by doffing operation.*

A MECHANISM for loosening spinning bobbins on spindles so that doffers will not be required to exert a pulling force to remove them has been developed for Monarch Mills, Union, S. C., by Callaway Institute, Inc., La Grange, Ga. Worked out by Clarence M. Asbill, Jr., mechanical research engineer, the apparatus is covered by U. S. Patent No. 2,381,482, assigned to Monarch Mills.

Basically, the mechanism consists of a horizontal rod running the length of the frame and fastened to the bolster rail, a series of short lifter pins extending from the horizontal rod toward the butt of the bobbin, and a handle for turning the horizontal rod to raise the lifter pins. These pins contact the butts of the bobbins and force them upward until their grips on the spindles are broken.

The lifters are not fastened directly to the horizontal rod but are seated in a bar section hinged to it. Each bar section spans six spindles. The device is constructed so that when the handle is in its neutral (down) position, the lifter pins are held free of the whorl and the spindle.

When using the bobbin lifter, the doffer applies it after the ring rail has been lowered and the frame stopped in preparation for doffing. Because of the irregular height of the bobbins on the spindles, the lifter pins do not contact all the bobbins at one time. As the handle is raised, forcing the pins higher, some bobbins are raised before others are touched by the pins. This distribution of lifting force tends to reduce the amount of energy the operator must apply to the lifter handle. It is said that when the mechanism is used all the bobbins on one side of a spinning frame can be lifted with no more energy expenditure than is required to lift one bobbin by hand.



One handle to a frame-side operates a series of bar sections supporting the lifter pins.

Since much of the strain of doffing is caused by breaking the frictional grip of the bobbin on the spindle, the bobbin lifter promises to reduce considerably the actual work-load of the doffing operation. It could prove a valuable aid particularly to doffers assigned to frames with large packages, strong yarns, or coarse numbers.

LABOR MUST HELP
For Mills to Stay in Business

HIGHLIGHTS: *NACM sees immediate future bright, but long pull needs better machines run by fewer people — Officers reelected for year.*

THE IMMEDIATE FUTURE of northern cotton mills is bright, but after current shortages are met there may be a difficult period, Russell T. Fisher, president, told members of National Association of Cotton Manufacturers at their annual meeting in Boston, Oct. 3. Among the problems faced by New England mills, he said, are the higher price of American cotton, sharply rising labor costs, strong competition from other industries (notably paper), and threat of imports from Europe.

Northern mills, he added, have serious labor problems to solve if they are to survive. He declared, "The North has always paid the highest textile wages in the country. Basically, this is due to the fact we are located in a highly industrialized area where unionization has become general; 70% of our competitors operate in agricultural areas where unionization is the exception rather than the rule. The matter of competitive labor costs is primarily a problem for union leaders to assume. Will they see the issue in its broader aspects and be willing to relinquish temporary gain to insure continued operation of the mills to provide employment for their members?"

G. Allan Dash, Jr., labor relations authority, in addressing the NACM supplemented Mr. Fisher when he pointed out ways in which employers and labor may cooperate to keep northern mills competitive. They are: "Less resistance to technological advances, direct assistance in helping the employer to keep his machinery operating at full capacity and enabling him to purchase the newest machinery developments available, and perhaps even suggestions for other and more profitable markets."

"The ability of the textile manufacturers," Mr. Dash said, "to meet substantial increases in minimum wages and shorter weekly hours may well call for an acceleration of technological advance in easier and faster ways to produce better products. The industry's ability to make technological advances will call for more cooperation from organized labor and less resistance to better and more machines being operated by fewer people."

Present officers of NACM were reelected for the coming year. They are: Russell T. Fisher, president; Albert H. Crossman of Utica & Mohawk Cotton Mills; Rudolph C. Dick of Naumkeag Steam Cotton Co.

The Perfect Knitting Oil Set-Up
PERFECT FINISHING
NO RUST
NO GUM
Shell Textilis Oil 24K
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YOU KNOW how rust and gum can plague you in your knitting operations. Well, just try Shell Textilis Oil 24K. You'll be surprised how shiny and free from rust and gum your knitting needles will be.
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Shell Textilis Oil 24K is but one of a complete line of lubricants designed specifically for each type of textile machine lubrication. Because of the many unusual qualities of this line of textile lubricants, we believe it will be worth your while to discuss your lubrication problems with one of our Shell Textile Lubrication Specialists.
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TEXTILE Equipment NEWS

"Squeeze" Extractor Doubles Drying Production By Reducing Loading and Unloading Time

An improved "squeeze" extractor which is credited with increasing the production capacity of machine drying from 50 to 120% is being manufactured by the Hydraxtor Co., Chicago, Ill. The machine operates on the principle of hydraulic pressure, and the loading and unloading time is said to be only 30 sec. each. It is being distributed by the Morris Speizman Co., Charlotte, N. C.

The Hydraxtor consists of a steel body, the inside of which becomes a pressure chamber when the machine is in operation; a rubber diaphragm in which the load is placed; a perforated metal cover; and a hydraulic pump.

The pump, connected with the extractor by a water line, is the only moving or vibrating part. When the load is placed in the rubber diaphragm inside the extracting chamber and the lid is securely fastened, the pump is put into operation. As it pumps water into the pressure chamber, the bottom of the rubber diaphragm is forced upward, collapsing as it is compressed. The fabric or hosiery presses against the lid, and water is forced out through the lid perforations.

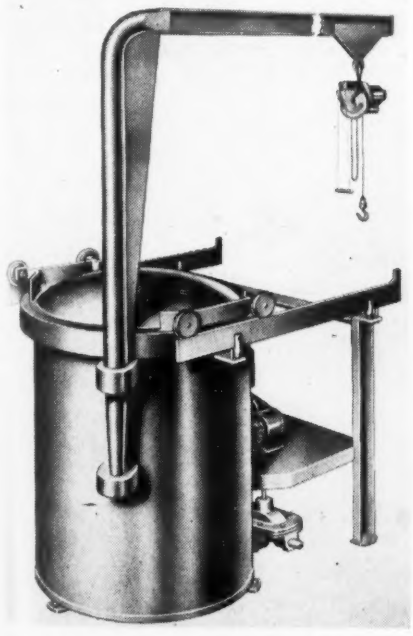
Exerting a pressure of 300 lb. in this squeezing action, the extractor is said to remove excess water from a load in approximately 5 min. operating time.

The major saving in time in the extracting operation is made in loading and unloading the machine. A canvas or net is placed as a lining in a truck, and material removed from the washer is dropped into it. When the truck is pushed to the Hydraxtor, the ends and sides of the net lining are gathered to form a sling holding the load. The sling is lifted by an electric hoist and lowered into the machine. It is not necessary to disconnect the hoist during extraction. When the process is completed, the sling is lifted out again.

Fabrics are not damaged by the squeezing action, and the percentage of extraction may be adjusted to the needs of the goods. Up to 8 loads per hr. may be processed.

Since there are no running parts, the machine does not need to be fastened to the floor. It is driven by a 2-hp. motor and provided with controls for pressure and operating time.

The pump delivers about 8.2 gal. of water per min. and requires 1 to 1½ min. to build up pressure to the desired level. This pressure is maintained for the length of time determined by the setting of the switch.

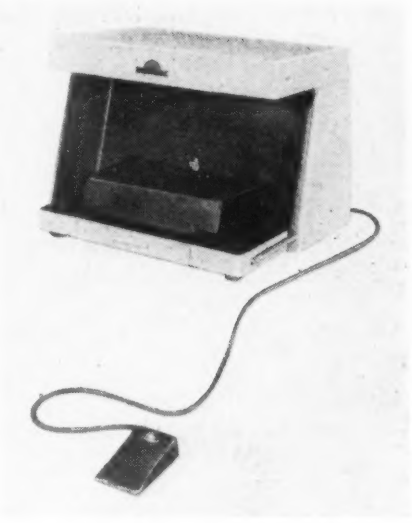


Because it has no moving parts, the extractor can be loaded and unloaded by mechanical means. (Hydraxtor)

Color-Matching Lamp Uses Contrasting Lights

Color matching by contrasting incandescent light and north light is accomplished in the new Analyte Color Comparator announced by Analyte Instruments, Inc., Bloomfield, N. J. The lights give color separations which greatly reduce color-matching errors.

The comparator is built of steel and is compact enough to be used on a workbench, table, or shelf. Operating on 115-volt a.c. current, the lamp is equipped with an automatic switch which cuts out the light when not in use.



The comparator is equipped with a tray adjustable to two heights. (Analyte)

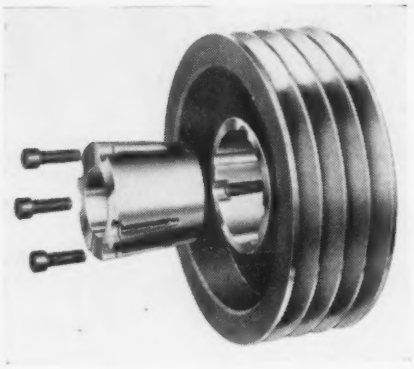
Designed to draw piece goods across the color-matching area, the comparator control may be operated by hand or foot.

V-Belt Sheaves Mounted By Wedge Action of Core

A means of mounting and dismounting V-belt sheaves by the use of a tapered bushing and screws has been announced by the Dodge Mfg. Corp., Mishawaka, Ind. The basis of the new method lies in the fact that only one side of the setscrew holes are threaded.

Three setscrews are used, and there are three holes with only the portions in the hub of the sheave threaded. As the screw is tightened, the threads engage the threads in the hub, and the screw head forces the tapered bushing inward. Since the sides of the holes in the bushing are not threaded, the bushing is locked in place only by the screw heads.

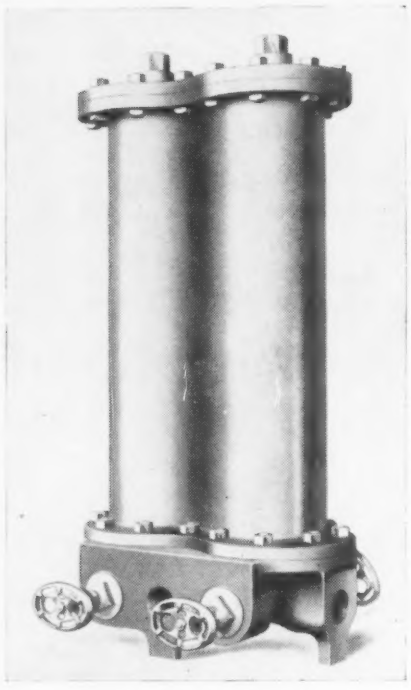
Two other holes, called jackscrew



The bushing is forced inward or outward by the action of the setscrews. (Dodge)

holes, are threaded only in the bushing and have no counterpart in the hub. When the setscrews are removed and two of them inserted in the jack holes, the bushing is forced outward by the jacking action of the screws.

Twin Filtering Unit Requires No Cleaning



The unit serves as a complete filter plant for industrial uses. (Adams)

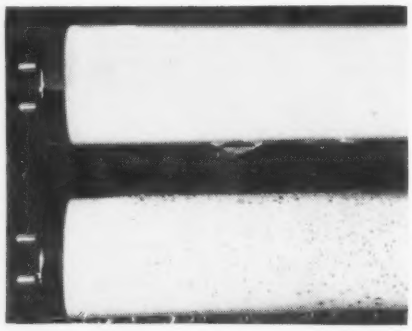
A new twin filter with the capacity to serve as a complete filter plant for drinking water, mill showers, and general water systems is being manufactured by the R. P. Adams Co., Buffalo, N. Y. The filter is sold under the name of the Adams TF-1, and it is available in three types of filtering tubes to meet a variety of needs.

The unit is easy to install, and it is said that in operation it is self-cleaning.

Moisture-Proof Coating Aids Lamp Efficiency

A new 40 watt, T-12 fluorescent lamp, designed for instant-starting and treated to eliminate operating faults encountered in conditions of high humidity, has been announced by Sylvania Electric Products, Inc., Salem, Mass. The lamps operate in a circuit which provides 450-volt operation without affecting light output or the life of the lamps.

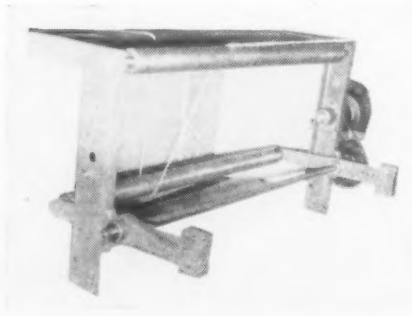
The lamps are supplied with hydrophobic coatings which cannot be rubbed or scratched off and which prevent the formation of a film of moisture.



After receiving a fine spray of water, an untreated lamp, top, is covered with a continuous film of moisture; while on a treated lamp, below, the moisture has collected in drops. (Sylvania)

Radial Compensator Synchronizes Motor Speeds

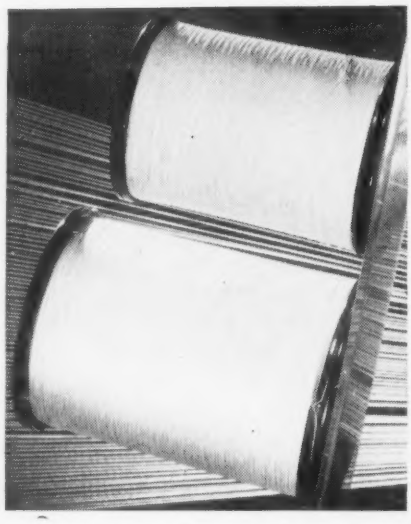
A radial compensator for synchronizing the speed of two or more motors has been announced by the Cook Machine Co., Waltham, Mass. The compensator is equipped with two top rolls and a dancer bottom roll. When operating in tandem with a continuous process, such as boiling off, the cloth passes over the top roll on the entrance side, under the bottom roll, and over the top roll on the exit side. Compensation is attained by the action of the dancer roll, which is arranged for minimum or for added tension on the cloth.



The compensator can be used to synchronize speeds in a continuous-finishing process. (Cook)

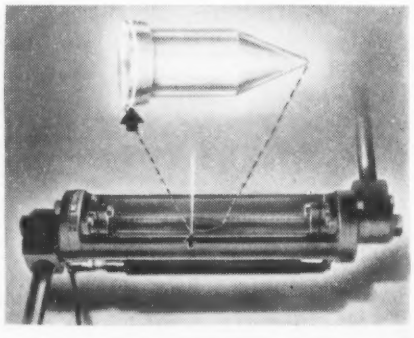
The rolls and shafts are made of stainless steel, and moving parts are mounted in ball bearings. The manufacturer states that the compensator is available in all widths.

Heavy-Duty Spools Have Plastic Ends



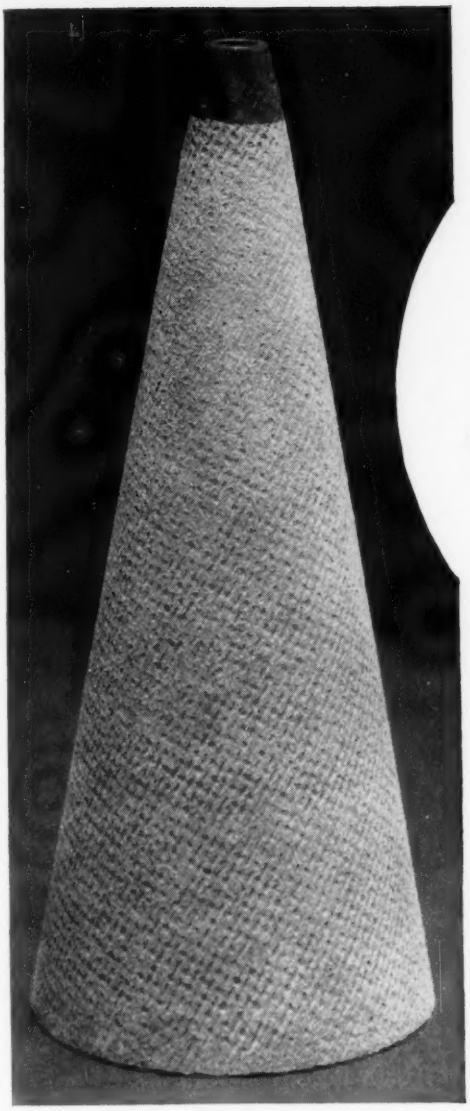
Tire-cord twister spools, made of plastic by a process of high-frequency electronic preheating, are now available, according to Bakelite Corp., New York, N. Y. The spool ends are kept within a tolerance of .005 in. for balance and even winding. (Bakelite)

New Rotor Is an Aid To Reading Rotameter



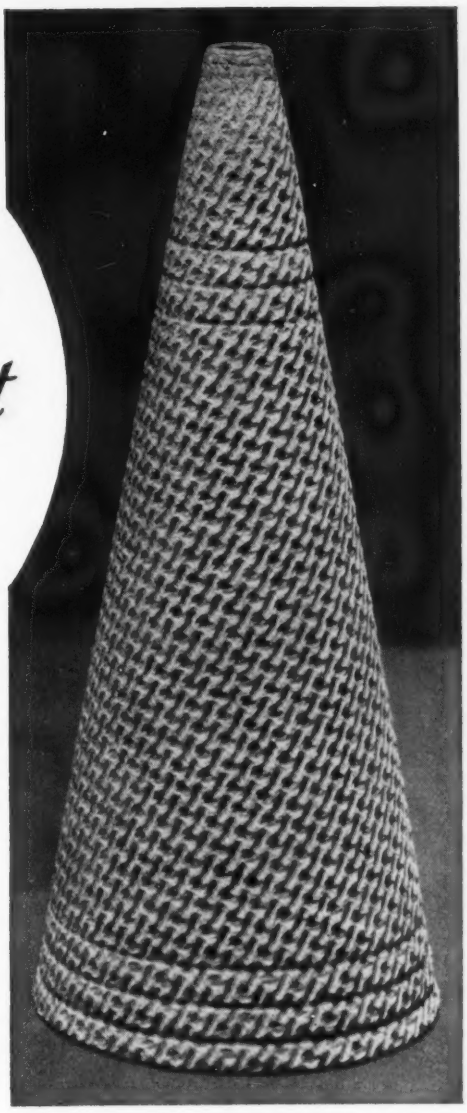
The rotor can be used in various types of rotometers. (Schutte & Koerting)

A rotor with a disc of light-transmitting material sandwiched in the rotor head to reduce the distance light must travel through an opaque liquid has been announced by Schutte & Koerting Co., Philadelphia 7, Pa. The rate of flow is thus delineated sharply in the resultant band of light on the



The Right Cone for the Right Purpose

9° 36′



Nutaper 9° 36′—Velvet surface on low mark paper—straight nose—lacquer tip. Large quantities of this cone are used for fine count cotton and mercerized yarns.

Nutaper 9° 36′—Regular mark paper—straight nose—special triple scoring top and bottom. General use covers a wide range of coarser types weaving or warp yarns and knitting and hosiery yarns.

Here two cones of same size and taper are given widely different applications by reason of finish. While some cone specifications are practically all-purpose in their use, generally speaking the best results are obtained by detail variations to suit a particular condition. Discovering the fine points that make a given cone work better is the job of the SONOCO Technical Service Department, which is qualified to bring wide practical experience and technical knowledge to help solve any particular problem.

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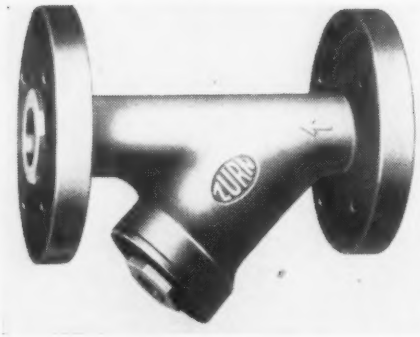
tube reference scale, and operators can make easy, accurate readings.

Known as the Line-o-Light rotor, the device can be used for practically any application and in any type of tapered glass-tube rotameter. Two types of discs can be furnished: Lucite for general applications, and Pyrex glass for extremely hot or highly corrosive fluids.

Pipeline Strainer May Be Magnetized



The strainers are available with or without a cleanout plug. (Zurn)

A pipeline strainer, built in a Y shape and having a strainer sleeve which cannot get out of place or vibrate when in use, is being manufactured by the J. Z. Zurn Mfg. Co., Erie, Pa. The sleeve can be removed or, if necessary, magnetized for intercepting metal particles in the pipeline.

The strainers are manufactured in a wide range of sizes, metals, and pressure capacities to meet a variety of industrial needs.

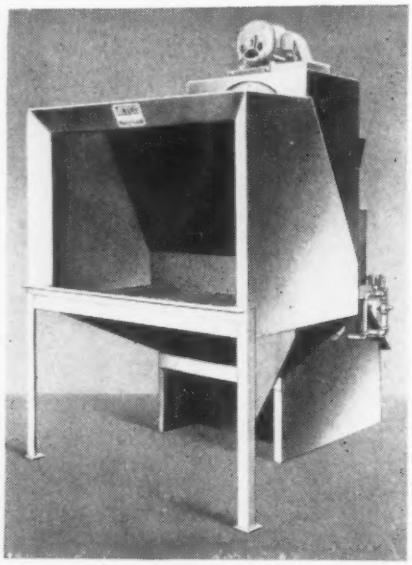
Truck Is Adaptable For Many Handling Jobs

A floor truck with a number of accessories for handling materials within the plant has been announced by the Market Forge Co., Everett, Mass. The truck has a steel chassis with a load capacity of 5,000 lb. It may be used with three, four, or six wheels.

The bed of the truck has stake pockets at each corner, and it may be converted from one type of load carrier to another by changing the body which is anchored to the bed by the corner stakes.

The truck can be made into a variety of carriers by changing the body, wheels, or tongue. (Market Forge)

Booth Collects Dust From Metal-Spray Gun



A booth for exhausting metal spray dust when using a gun to spray metal is being built by the Metallizing Engineering Co., Long Island City, N. Y. A sloping back-wall prevents blasts of air from the gun from eddying or circulating in the booth. A dust trap collects the excess metal, and a door is provided for removing it. (Metallizing Engineering)

Thermometers may be obtained in the range of —90° F. to 1000° F. (Equipoise)

Thermometer Recording Is Shown on a Dial

A thermometer which records temperature on a dial indicator in response to the expansion or contraction by heat conditions of an inner metallic coil is being offered by Equipoise Controls, New York, N. Y. Ranges from —90° F. to 1000° F. are available, with dial sizes of 2, 3, and 6 in.

The thermometer is said to be unaffected by corrosion, vibration, shock, or rough handling.

Dust Removed From Air By Portable Filter Unit

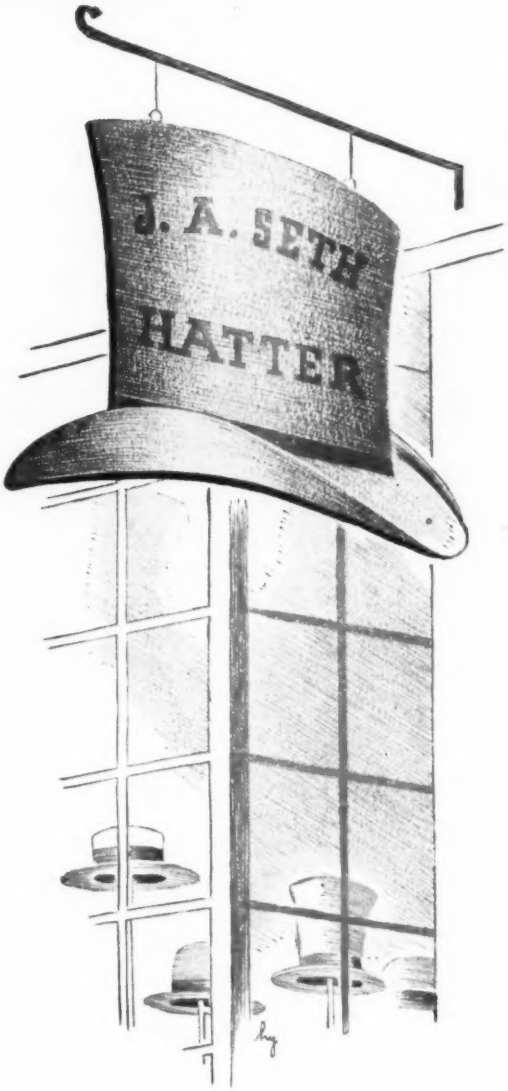
A portable filter which removes dust from the air is being manufactured by the Dust Filter Co., Chicago, Ill. The filters are designed for use in connection with operations which produce dangerous or obnoxious dusts.

All models of the removers are self-contained and may be placed at any point desired. The large unit contains a filter surface area of 48.8 sq. ft. Dust is collected in the bottom of the filter and may be removed by withdrawing the dust pan.

The filters weigh from 150 to 250 lb., are 36 to 48-in. high, and use ¾ to 1½ hp. motors. (Dust Filter)

Bobbinless-Shuttle Loom

A loom of radically different construction from conventional shuttle-bobbin types is in operation at Sulzer Bros., Winterthur, Switzerland. In brief, a shuttle about 2½ in. long by ½ in. wide picks up a single strand of filling from a stationary spool and carries it at high speed across the loom to a receiving station. The small dimensions and weight of the shuttle make practicable a rigid construction of reeds and racks. The shuttle travels through and is guided by a metal track, so that it does not touch the warp at any point. The several shuttles employed are returned to the sending station on a continuous conveyor below the warp. [Further details of this much-discussed loom will appear in these pages next month.]



Once upon a time...

When a beaver was a hat, not a beard, these signs indisputably marked hatters and attracted customers. The trademark or name on your products need similar distinction.

The trust inspired by the identification of your merchandise depends largely upon the quality of the marking. Intelligently conceived, attractively designed, Kaumagraph Products can lift your merchandise above the commonplace, and give it the impetus that builds greater sales.

Kaumagraph Dry Transfers*, Prestomarks, Embossed Seals, Lithography — developed for textile application through years of research, new methods and products tested by war necessities can meet your severest specifications for adequate economical identification and packaging. As you plan for reconversion to produce more and better civilian merchandise, Kaumagraph is hopeful that peace will release its facilities for your greater, more effective use. Send for a Kaumagraph Identification Man today.

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Dyes & Chemicals — PRODUCTS & PROCESSES

Stable Wax Emulsion

PARAMUL 251-A; American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, New York, N. Y.

Paramul 251-A is a high wax content emulsion, possessing excellent stability at both high and low temperatures.

The company states that by combining aluminum acetate or formate solutions with this product, fabrics treated with such a combination will have excellent water-resistance; and the effect can be obtained at a reasonable cost. It is said also to be compatible with various mildew-proofing and germicidal products, so that combinations may be made which will meet government specifications on various fabrics requiring a water-repellent and mildew-resistant finish.

Protective Agent

TRIPLE-A NAPHTHENATE PRESERVATIVES; Quigley Co., 527 Fifth Ave., New York 17, N. Y.

This product is offered as an effective and low cost protective agent for wood and textiles against rot, decay, mildew, and insects. It is said to control or prevent dry rot, decay, fungi, and molds in wood.

The company states it is non-poisonous to humans, does not irritate the eyes, will not induce dermatitis, and does not increase fire hazard. It can be applied by brushing, spraying, dipping, or pressure impregnation.

The company says that effective protection against mildew is given to heavy textile fabrics—such as canvas, burlap, duck, rope, bags, and tarpaulins—when the material is properly applied.

Printing Color Available for Dyeing Piece Goods

CIBA BROWN GM; Ciba Co., Inc., Greenwich & Morton Sts., New York, N. Y.

Ciba Brown GM Double Paste Extra New is now available to piece dyers, the Ciba Co. has recently announced. Under the name of Ciba Brown G, this color has long been known to printers but is perhaps less well known to piece-goods dyers. It is a reddish shade of brown, possessing good color value and all around fastness.

The new GM type is one that has been finely milled to render it more suitable for dyeing purposes than the printing type.

Under Conservation Order M-103, it is a class "D" color; but it is said to possess approximately the same fastness as the redder shades of the class "B" vat browns.

Mill Maintenance — TO KEEP 'EM RUNNING

Scoop on Lift Truck Finds Many Mill Uses

Work which formerly required three men full-time is now done by a "one-man gang" at Boott Mills, Lowell, Mass., by using a scoop attached to the front end of a Towmotor lift truck, according to information received from Towmotor Corp., Cleveland, Ohio. The scoop was added to the truck by Joseph Howard, mill engineer, and is kept busy at such jobs as moving coal, hauling ashes, moving and stacking drums, carrying wet cement, etc.

In hauling coal to the boilers, the scoop carries a load of 600 lb. each trip, lifting the load to a height of 7 ft. The average trip on this operation is 500 ft., and the truck makes the run in 5 min. From 300 to 600 tons of coal and 30 to 60 tons of ashes are handled each month.

Hauling wet cement from the mixer to the forms is one of the odd jobs done by the truck and scoop at Boott Mills.

Hauling wet cement from the mixer to the forms is one of the odd jobs done by the truck and scoop at Boott Mills, Lowell, Mass.

BARNES USES ONLY

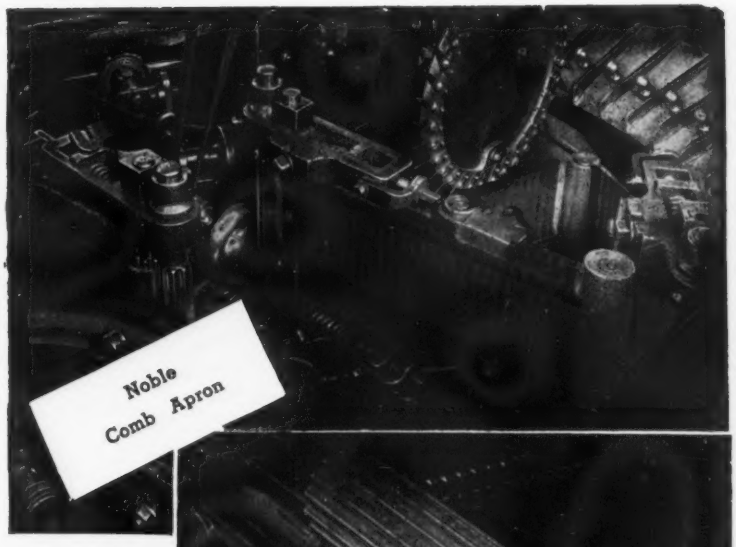
SELECTED HIDES

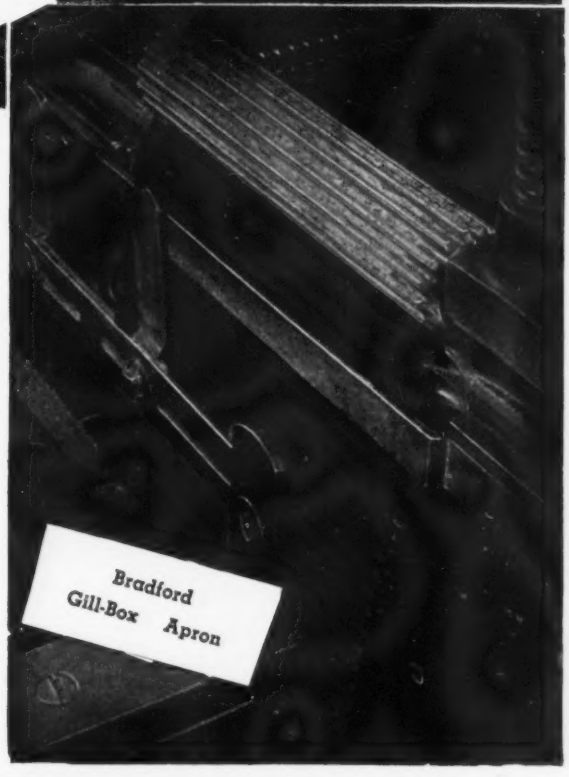
FOR

WORSTED APRONS

FOR

BRADFORD COMB AND GILL BOXES





Barnes buys the right leather, gives it the right processing. Our apron leather is tanned from finest Foreign and Premium Domestic Steer Hides in our own tannery.

Barnes aprons are hand processed throughout and are thoroughly seasoned before shipping. They are of even thickness throughout, have minimum stretch, run straight, and have waterproof laps which are strong, flexible and of even thickness overall. They have above all, exactly THE CORRECT SURFACE to grip the wool fibres *gently* and carry it forward in just the manner to assure a properly made yarn. Even using the *best leathers* won't insure this special surface finish. THAT is the result of the many years that Barnes has spent on research and close experience with worsted problems.

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Aprons for Combing, Preparing, Finishing and Drawing FRENCH AND BRADFORD SYSTEMS

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First-Quality Center Stock

Prestretched and Manufactured for Each Drive Condition

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SINCE 1876

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APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

Kinks AND SHORT-CUTS

A $25 VICTORY BOND FOR YOUR IDEA

A $25 Victory Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **WAR BOND PRIZE WINNER FOR OCTOBER**

(August Contest)

Yarn Guide Decreases Damage From Coning

When winding yarn onto cones on standard cones such as Universal Model 50, damage to the product frequently results from the yarn jumping out of the guide or being pinched or rolled between the guide and the cone. The guide shown in the sketch was designed to eliminate this trouble by (1) maintaining the pressure on the cone while (2) reducing the angle between the thread and the cone at the point of contact.

In the illustration, the drawing at the top shows tne hollow top of the guide through which the yarn is drawn to the cone and the rounded shoe, 1, which maintains sufficient pressure on the cone to build a firm package.

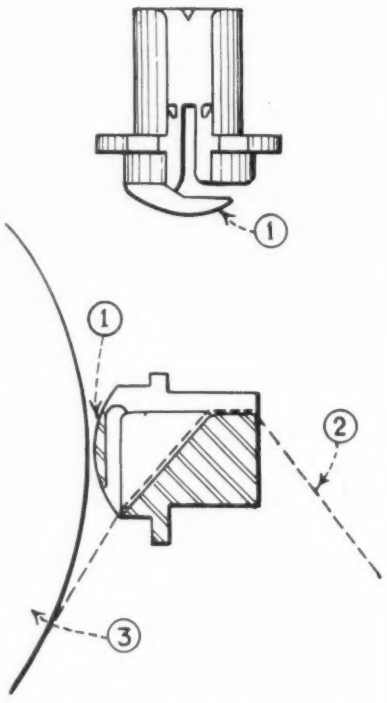
In the drawing at bottom, the solid part of the guide is shaded to contrast with the hollow yarn-slot. The rounded shoe presses against the side of the cone, 3, while the yarn, 2, is being wound onto the cone.

Three advantages are derived from the use of this guide:

1. The yarn is not squeezed between the guide and the take-up package;

2. The yarn is wound onto the cone in a more relaxed state, thus avoiding the twisting on the package which tends to draw the end loops toward the center of the cone;

3. Since less tension is required, the stripping action of the snubbing angles can be reduced. *(K-383) Frank Jones, Rome, Ga.*



The yarn is wound onto the cone at a less severe angle.

Clamp Holds Sticks While Holes Are Bored

When new picker sticks are installed on looms, the fixer must bore several holes in them for the check straps, etc. While measuring and boring the holes do not take a lot of time, the job can be done more quickly by using a clamp to hold six or more sticks so that only one measurement is necessary.

A clamp for this purpose is shown in the sketch. A piece of flat steel $8\frac{1}{2}$x$1\frac{1}{4}$x$\frac{3}{16}$ in. will be sufficient for making the clamp. Each end of the flat steel should be bent over $1\frac{1}{2}$ in. at a 90° angle, and a setscrew hole drilled and threaded in the center of one of the ends.

Six picker sticks can be placed in the

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High quality *Dixie Durene* is both spun and processed under Dixie's "Controlled Manufacture" that assures strong, clean yarn, unusually free from imperfections. The use of Dixie Durene results in better, more durable garments. It means *more sales.*

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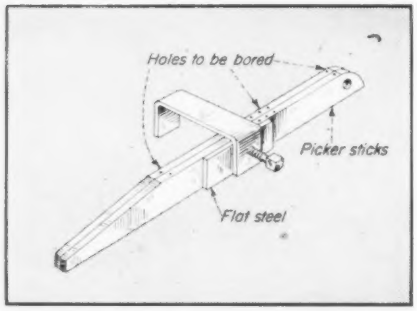
Dixie MERCERIZING COMPANY, CHATTANOOGA 1, TENNESSEE

KINKS & SHORT CUTS

(Continued from page 152)



Six picker sticks are held firmly in the clamp while the holes are measured and bored.

clamp and held securely by tightening the setscrew. A piece of flat steel should be placed between the point of the setscrew and the picker stick to protect the wood. *(K-375) John L. Bove, Hazelton, Pa.*

Collapsible Tubes Aid Loom Lubrication

In some plants, lubricating picker-guide spindles on looms is done by weavers; and steps should be taken to make this job as clean and easy as possible.

The writer found that providing each weaver with a collapsible tube filled with the grease used on the spindles was a help to the weavers and to the lubricating job. The lubricant was kept clean, and the housekeeping around the looms was improved. When a weaver used all the grease in a tube, it was taken to the storeroom and refilled. *(K-380)*

Belt Shipper Made For Overhead Drives

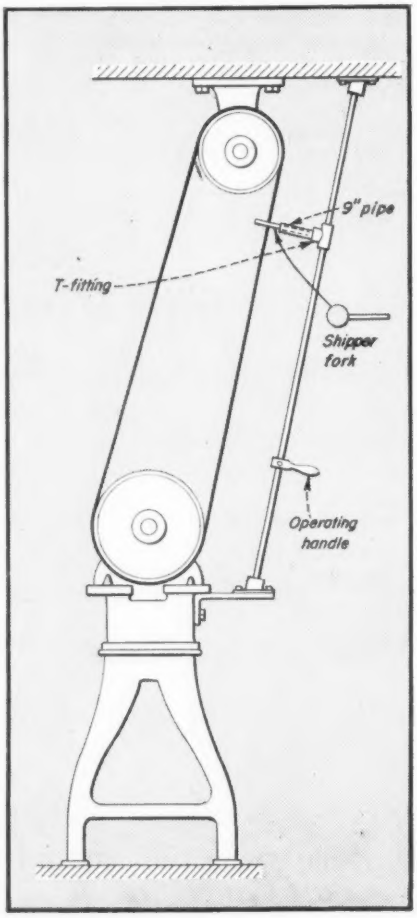
In many shops equipped with machines which have cam or stepped pulleys, moving the drive belt which transmits power from the overhead shaft to the machine can be done only by using a pole. Besides being a minor accident hazard, this practice can consume a considerable amount of time on jobs which require several changes of machine speed.

An inexpensive belt shipper, shown in the sketch, can be made which will eliminate the use of a pole for shifting the belt.

One end of a piece of ½-in. pipe is anchored in a bearing at the back of the machine, and the other end is placed in a bearing fastened to the ceiling. A T-fitting is secured to the verticle pipe at a point below and near the drive pulley. The open end of the T should have a piece of pipe 8 or 9 in. long screwed into it and extended toward the drive belt.

A shipper fork should be made by welding a ring onto the end of a steel rod about 8 or 9 in. long. The ring must be big enough for the belt to run through constantly. The steel rod is inserted into the open end of the pipe screwed into the T-fitting, and the fit should be loose enough for the rod to work freely back and forth if the belt should strike against the ring.

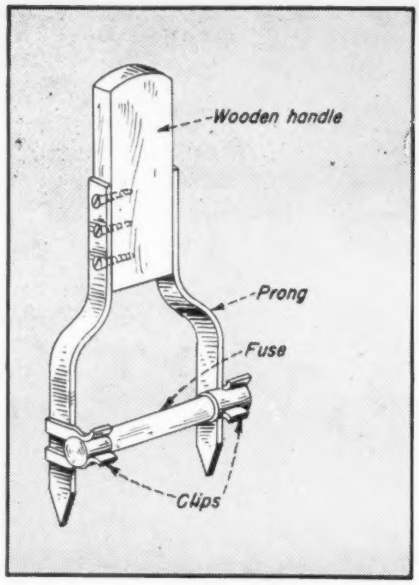
Near the lower end of the shipper pipe, a handle should be fastened so that the operator can shift the belt by turning the handle. A turn of the handle moves the vertical pipe and shifts the belt by swinging the shipper fork. *(K-381) Richard Dilworth, Pawtucket, R. I.*



The belt shipper is made of ½-in. pipe and is placed at the back of the machine out of the operator's way.

Device Quickly Tests Warp Stop-Motion Fuse

On looms equipped with electric knock-offs, electricians frequently have trouble locating a knock-off fault due to a damaged fuse. Testing the motion by making contact with electrodes does not narrow the possible sources of trouble down to the fuse. For this reason, the writer has devised a means, shown in the sketch, for testing a fuse.



A damaged fuse will not allow the current to pass through to the loom ground to stop the machine.

Two metal prongs, wide enough to hold a fuse lengthwise between them, are fastened to a wooden handle for insulation. Clips for holding the fuse ends are brazed to the prongs.

To use the testing device, place a fuse in the clips and touch the prongs to an adjoining stop motion that is working satisfactorily. One prong should touch an electrode; and the other, the electrical ground. If the fuse is good, the loom will stop. *(K-389)*

Movable Warp Stands Aid Tying-in Harnesses

Stands for holding loom warps while the harnesses are tied in increase the speed of handling the warps and decrease the possibilities of damaging them. A warp mount and stand made for this purpose is shown in the photograph.

Using a 16-in. warp-beam flange as a base, weld in a position vertical to the flange a 22½-in. length of 2-in. pipe to form the nonadjustable leg of the stand.

An adjustable extension is made by placing a 1½-in. pipe 20 in. long inside the 2-in. pipe. With approximately half the length of the smaller pipe extending from the top of the larger pipe, drill three bolt holes about 1 in. apart through both pipes near the top of the larger. A bolt inserted in a hole in each pipe will hold the smaller pipe in place, and the three

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In addition, CEGLIN increases fabric strength and durability . . . stabilizes shrinkage and stretching . . . increases resistance to slippage, distortion and abrasion. CEGLIN can be applied before boil off. . . during mercerization . . before or after dyeing . . . or as a final finish. It does not require curing nor ageing at high temperatures.

How CEGLIN *Increases the Intrinsic Value of Fabrics*

- Provides a finish of distinguished character.
- Stands up under laundering.
- Adds tensile strength.
- Stabilizes shrinkage and stretching.
- Increases resistance to slippage or distortion.
- **MAKES POSSIBLE A WIDE RANGE FROM SOFTNESS TO CRISPNESS.**
- Improves resistance to abrasion.
- Helpful in solving manufacturing problems.

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* ★ Reg. U. S. Pat. Off.

pairs of holes make adjustments of height possible.

At the top of the 1½-in pipe, cut a 1-in. slot to receive the end shaft of the warp beam.

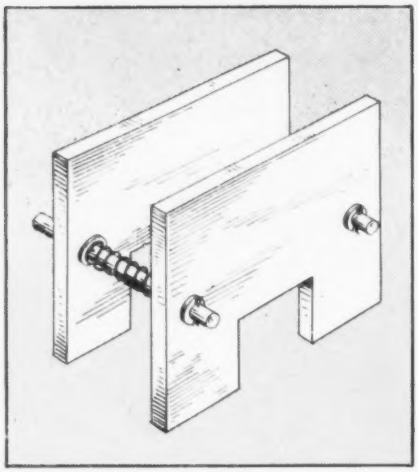
Two of these stands will be needed to handle a warp. To use them, the warp is raised with a hydraulic truck, and the end beam-shafts are lowered into the slots of the stand. The truck is removed until the harnesses are tied in. Then it is used again to raise the warp off the stands and lower it into the loom. *(K-382) Nelson Evans, Slatington, Pa.*

The stands are made from lengths of 1½-in. and 2-in. pipes.

Auxiliary Vise Jaws Protect Smooth Surfaces

When mill fixers find it necessary to use a vise for working on a smooth, soft, or polished surface, they usually must take some precaution to avoid marring the surface with the vise jaws. A pair of auxiliary jaws, shown in the sketch, have been used satisfactorily.

The jaws may be made of hardwood or fiber, and a square opening should be cut in the middle of the lower side



The springs force the auxiliary jaws open as the vise jaws are opened with the screw handle.

to fit the inside of the vise. By boring holes in the auxiliary jaws for pins and springs, the jaws can be controlled by the vise screw handle. The size of the jaws and springs will depend upon the size of the objects with which the fixer will work. *(K-378)*

Design Holder Used While Forming Patterns

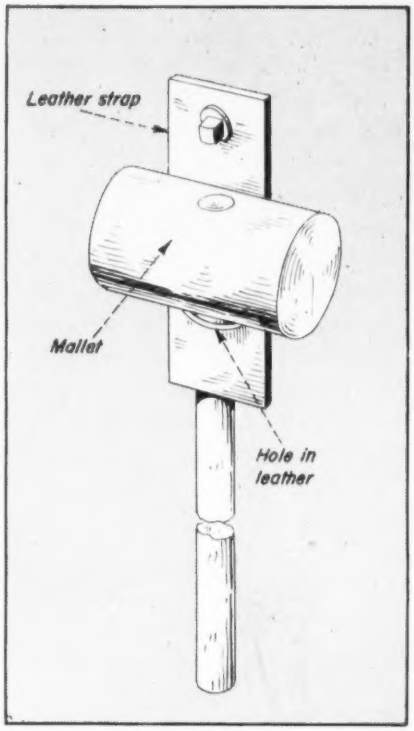
A holder for cloth designs, to be used while pegging pattern chains, can be made from a cardboard carton cut across one corner, as shown in the sketch.

After cutting a triangle from the end of the carton, fasten the design to the holder with a paper clip. On long designs, the pegged portion can be shifted over the top of the holder, lessening the chances for errors. *(K-386) H. E. Wenrich, Berwick, Pa.*

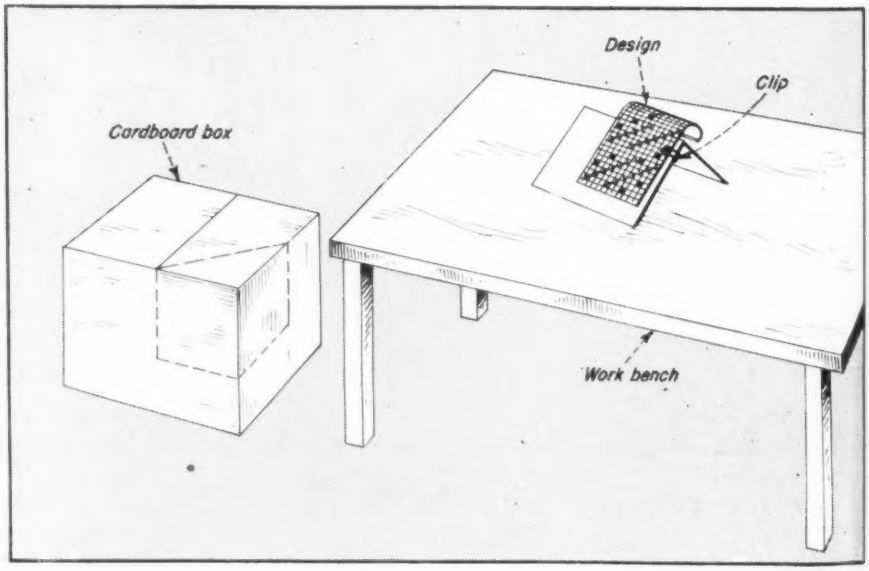
Hangers for Heavy Tools Can Be Made of Leather

Sledge hammers and other heavy tools will be less in the way if they are kept in a regular place and in suitable hangers, such as the mallet shown in the sketch. The hanger can be made by cutting a leather strap about three times as wide as the handle of the tool, and about 6 in. long. Fasten the top of the strap to the wall or cupboard with a bolt and washer.

A hole large enough for the end of



Other heavy tools with handles similar to the handle of a mallet can be stored in this kind of hanger.



The triangular holder is made of heavy cardboard cut from the corner of a box.

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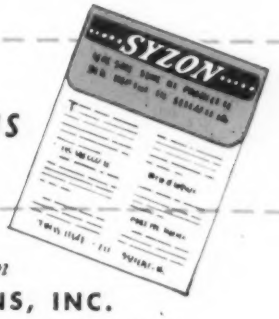
A SOLVENT SIZE FOR PROCESSING NYLON HOSIERY KNITTING YARN

☆ FOR FULL-FASHIONED AND SEAMLESS NYLON HOSIERY

☆ TROUGH APPLICATION

☆ DRY KNITTING

☆ NOT CRITICAL TO TEMPERATURE AND HUMIDITY VARIATIONS



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KINKS & SHORT CUTS

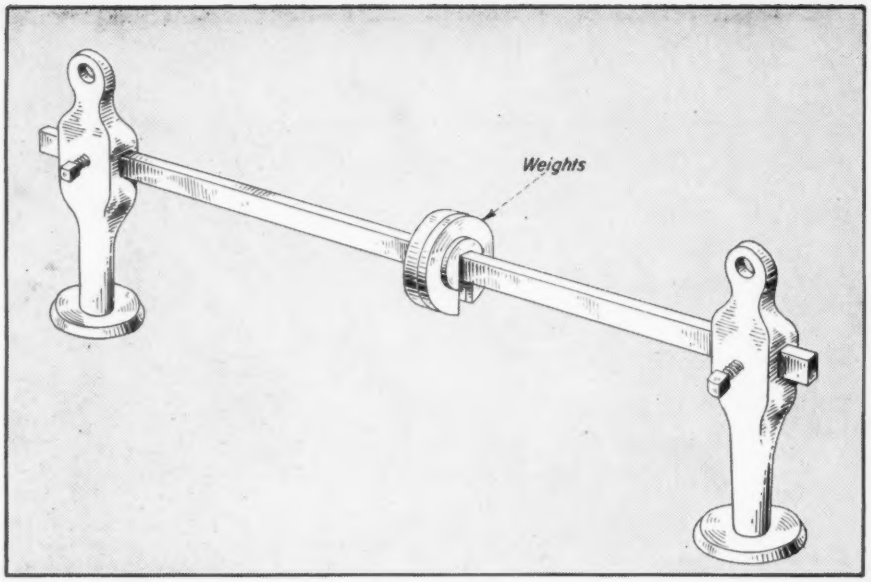
(Continued from page 156)

the tool handle to slip through should be cut horizontally in the strap about 2 in. from the lower end. Put the end of the handle into the hole and push through until the head of the hammer is resting against the leather strap. (K-387)

Weights Not in Use Should Be Kept on Rack

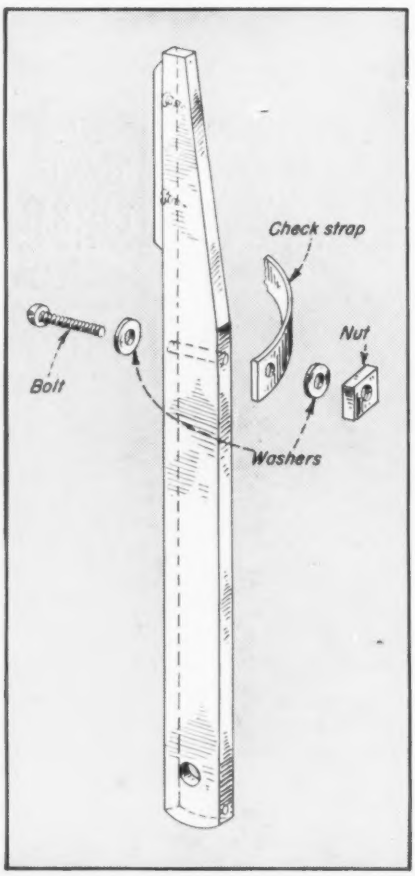
When tensioning a warp with weights, the number of weights must be reduced to even the tension as the warp becomes smaller. Usually the weights taken off are dropped on the floor or piled up at the side of the loom.

A rack for holding them can be made from a bar similar to the one used for controlling the warp let-off. The bar can be cut off to any length desired and each end fastened to a hanger to serve as legs for the stand. Weights from several looms can be placed on one bar. (K-376)



Let-off weights should be placed on the rack when not in use on the loom.

Strap Fastening Affects Life of Picker Stick

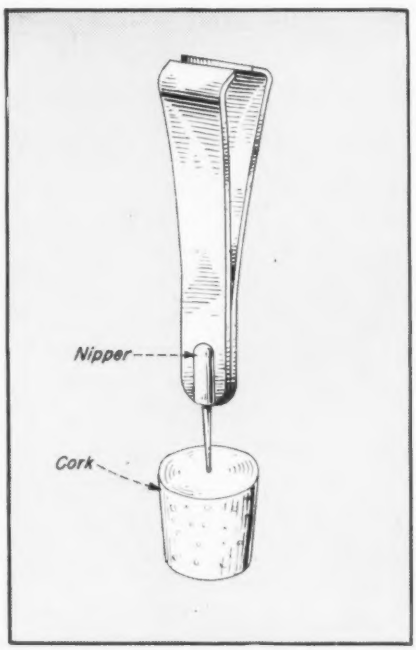


Mills which follow the practice of boring a hole through the side of a picker stick for fastening the check strap will find that the strength of the stick is less affected if the strap is fastened to the edge instead of the side. (K-377).

Cork Stopper Protects Burling-Nipper Point

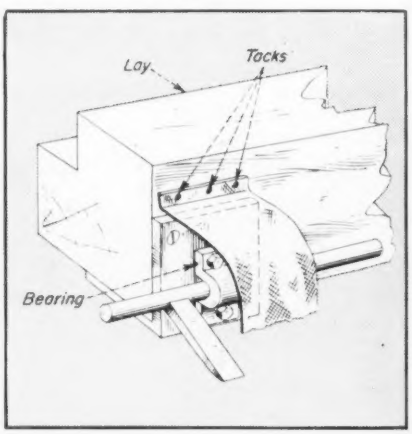
A cloth inspector using a burling nipper, or "needle-point picker," for removing gouts, slubs, and other lumpy defects from the cloth, often sticks the point of the nipper into the wooden inspection frame until it is needed again. This dulls the point of the tool. A good way to prevent damage to the tool is to use a large cork stopper as a cushion for holding the nipper.

The cork can be attached to the frame by drilling a hole through the frame side or by gluing it to the frame. (K-385)



The cork holds the burling nipper when not in use.

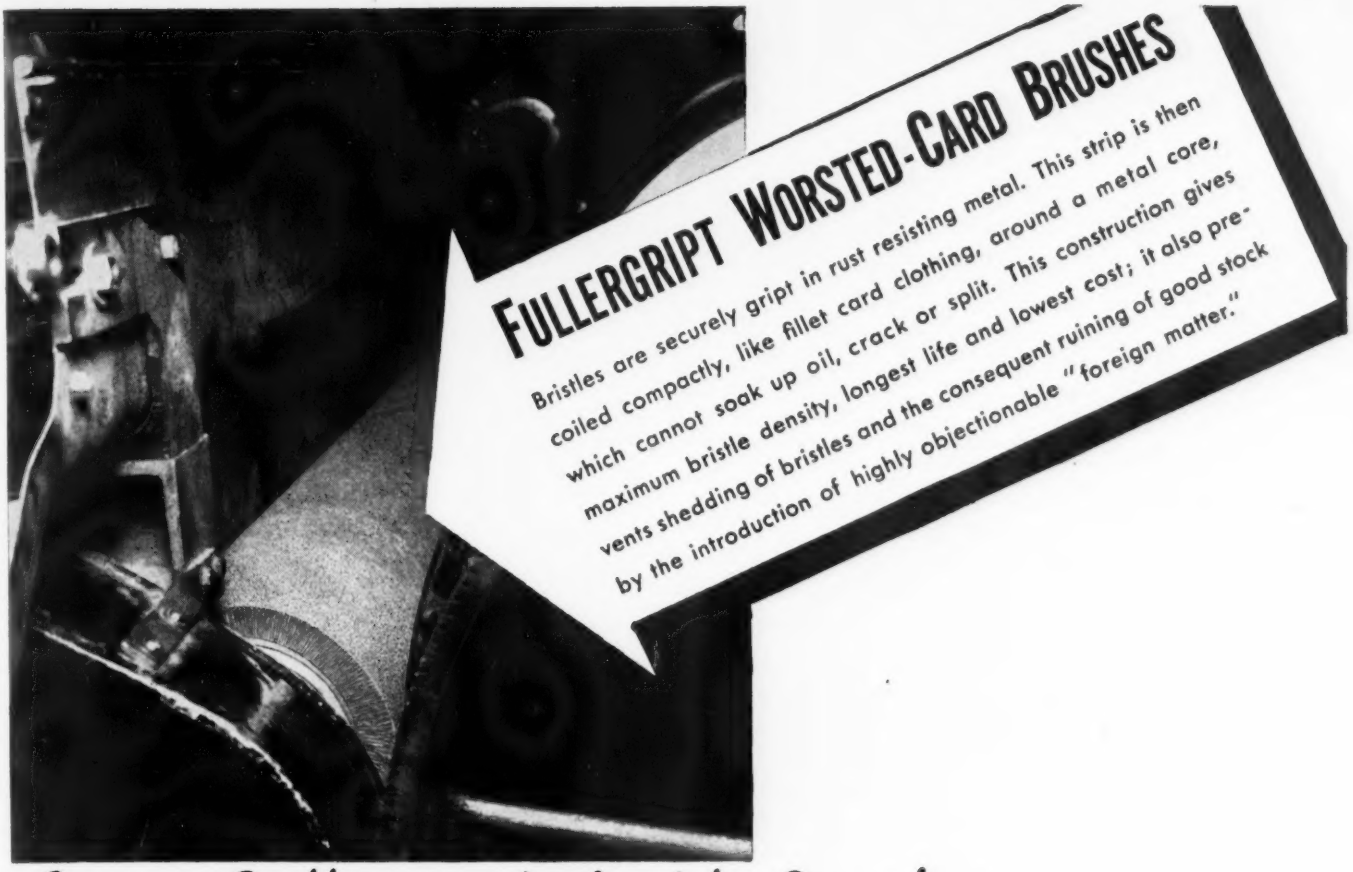
Splashing of Oil Prevented by Cover



The bearing cover prevents oil from splashing onto the cloth.

Bearing covers made of heavy canvas or duck will prevent oil from splashing onto the cloth when the protector-rod bearings of a loom are oiled. The covers are cut in the size needed, and one end is tacked to the lay with carpet tacks. The other end is allowed to fall over the bearing, as illustrated in the sketch.

The cover can be lifted to oil the bearing; and when it becomes dirty or oil-soaked, it can be replaced in a few minutes by a new one. (K-379)



FULLERGRIPT WORSTED-CARD BRUSHES

Bristles are securely gript in rust resisting metal. This strip is then coiled compactly, like fillet card clothing, around a metal core, which cannot soak up oil, crack or split. This construction gives maximum bristle density, longest life and lowest cost; it also prevents shedding of bristles and the consequent ruining of good stock by the introduction of highly objectionable "foreign matter."

Again Fullergript Textile Brushes do a Better Job at Lower cost!

Here is a new success story — to add to the ones on Fullergript cotton-card brushes, Fullergript thread-dresser brushes, Fullergript dabbing brushes and other Fullergript textile brushes.

FULLERGRIPT WORSTED-CARD BRUSHES

contribute to this impressive demonstration. Its tightly packed bristles push the wool — all the wool — down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal.

Fullergript brushes are proving helpful in three ways on worsted cards — as feed-roll brushes to start the wool properly in the teeth of the first lickerin, as Morel brushes to disentangle the burrs from the wool, and as Morel transfer brushes to carry the wool to the Morel roll and disentangle the burrs at the same time.

In all these applications the great density of the Fullergript bristles insures that the wool will be pushed into the clothing — not back into the brush! This means the brushes will not clog up rapidly, lose their efficiency and require cleaning — always a difficult, time-consuming job.

YES, its a new success story. Do you want to hear the others — on cotton-card brushes, for example? If so, write us and we'll gladly relate them to you.

Do You Want To Remove Burrs?

Look at the quantities pouring out of this worsted-card in a prominent New England combing plant.

FULLERGRIPT — *better work at lower cost*

The FULLER BRUSH Company

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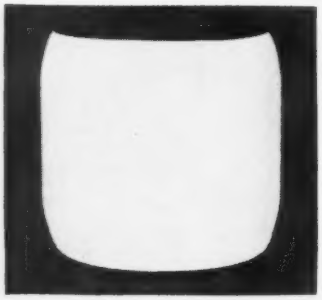
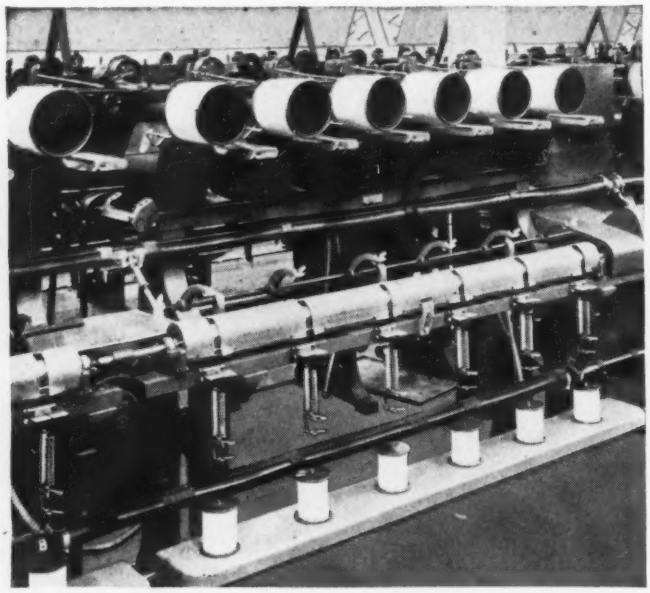
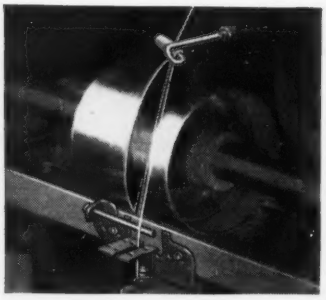
Sizing and coning Nylon by the Universal System results in cones that are ideal for knitting



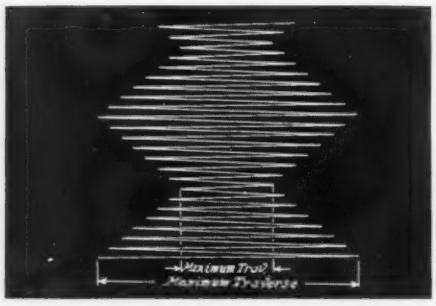
Universal Sizing Tube is designed for uniform, rapid drying and free yarn delivery. Use of four winds during each traverse limits yarn oscillation.



Tension *must* be uniform. The thin yarn layer on the sizing tube means minimum change in yarn takeup speed ... contact points on the No. 250 Sizing Machine are few ... yarn travel is nearly straight from supply to wound tube.

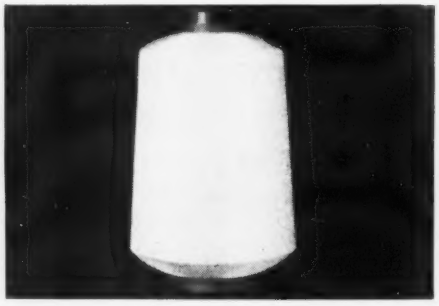


Percentage of size pick-up must be accurately controlled. This is easily accomplished by controlling the roll speed and the amount of yarn contact.



Yarn must be laid carefully on the sizing tube to permit free delivery when supplying yarn to the coning machine. The traverse is alternately lengthened and shortened to produce tapered selvedges.

Redraw is undesirable. The Universal Sizing Tube is used as a direct supply to the Universal No. 50 which also winds with minimum tension and accurately applies the desired amount of emulsion.



Universal Pineapple Cone, produced on the No. 50 Machine by the extremely simple Pineapple Coning Attachment with roller bail, is the ideal knitting cone for Nylon.

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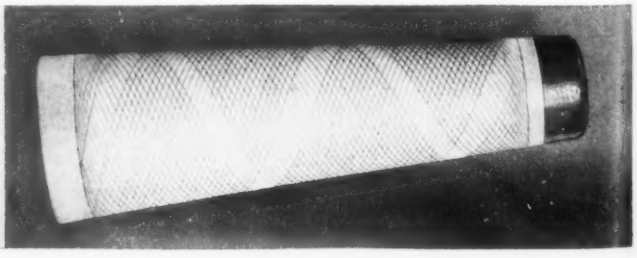
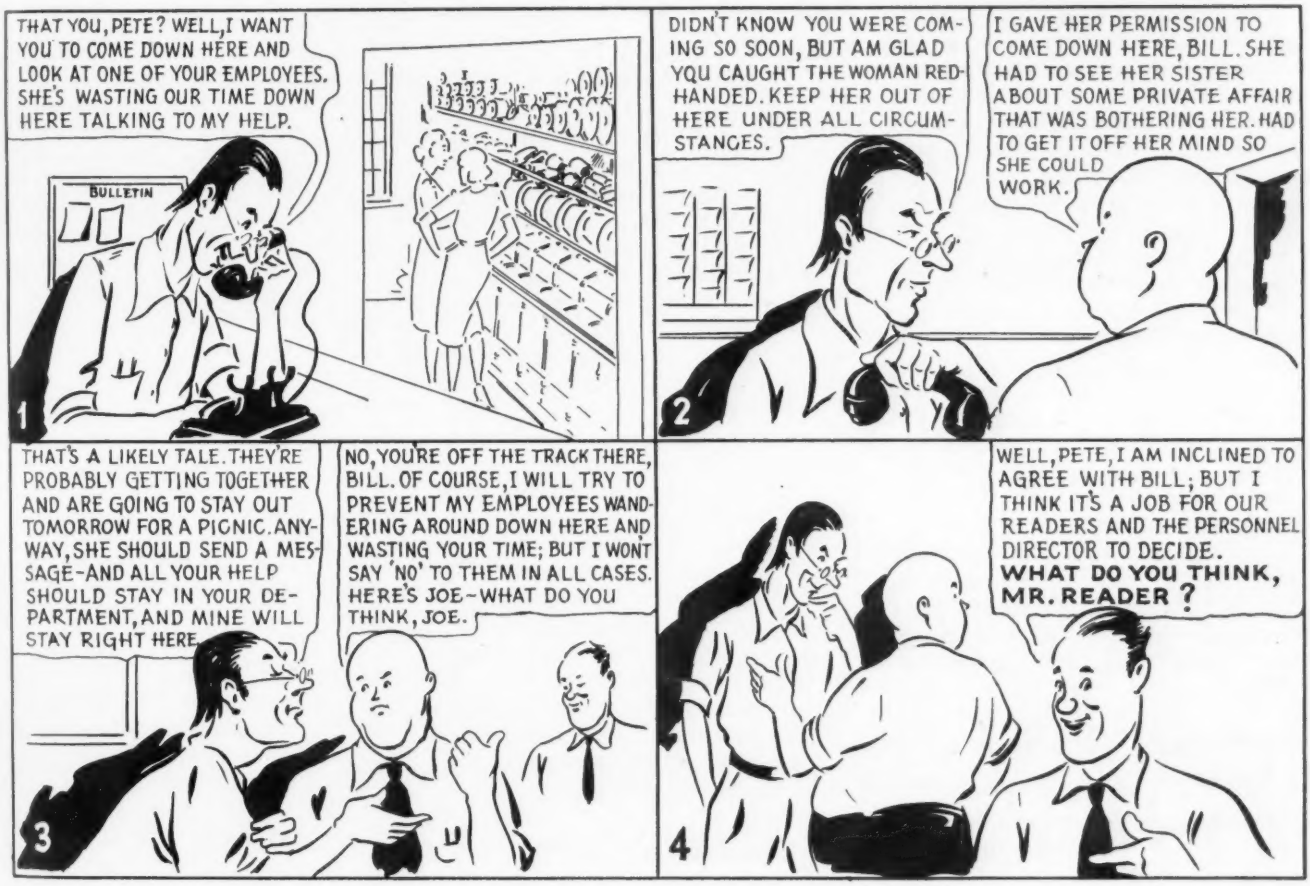


LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

The Wandering Employee

What limitations, if any, should be placed on employees circulating around the mill during hours of operation?


THAT YOU, PETE? WELL, I WANT YOU TO COME DOWN HERE AND LOOK AT ONE OF YOUR EMPLOYEES. SHE'S WASTING OUR TIME DOWN HERE TALKING TO MY HELP.
BULLETIN
1
DIDN'T KNOW YOU WERE COMING SO SOON, BUT AM GLAD YOU CAUGHT THE WOMAN RED-HANDED. KEEP HER OUT OF HERE UNDER ALL CIRCUMSTANCES.
I GAVE HER PERMISSION TO COME DOWN HERE, BILL. SHE HAD TO SEE HER SISTER ABOUT SOME PRIVATE AFFAIR THAT WAS BOTHERING HER. HAD TO GET IT OFF HER MIND SO SHE COULD WORK.
2
THAT'S A LIKELY TALE. THEY'RE PROBABLY GETTING TOGETHER AND ARE GOING TO STAY OUT TOMORROW FOR A PICNIC. ANYWAY, SHE SHOULD SEND A MESSAGE—AND ALL YOUR HELP SHOULD STAY IN YOUR DEPARTMENT, AND MINE WILL STAY RIGHT HERE.
NO, YOU'RE OFF THE TRACK THERE, BILL. OF COURSE, I WILL TRY TO PREVENT MY EMPLOYEES WANDERING AROUND DOWN HERE AND WASTING YOUR TIME; BUT I WON'T SAY 'NO' TO THEM IN ALL CASES. HERE'S JOE—WHAT DO YOU THINK, JOE.
3
WELL, PETE, I AM INCLINED TO AGREE WITH BILL; BUT I THINK IT'S A JOB FOR OUR READERS AND THE PERSONNEL DIRECTOR TO DECIDE. WHAT DO YOU THINK, MR. READER?
4

Letters From Readers

Constant Training Imperative

"Training for the Older Help"
(Pete & Bill, Aug. 1945)

Dear Pete & Bill:

Yes, I'd say aptitude tests and schooling should be given from time to time—no matter how experienced the help should be. The foreman, too, by all means, should have schooling every so often as he goes along. It is important that minds be kept receptive as well as informed so I believe that schooling and aptitude tests are truly imperative under current competitive conditions. (PB801)

No Special Privileges!

"Special or Uniform Privileges"
(Pete & Bill, July 1945)

Dear Pete & Bill:

Rule out the word "special" wherein privilege is concerned and you will have gone a long way toward smoothing out an otherwise ticklish problem in labor management.

A special privilege can be, and usually is, detrimental to a company's cause. All privileges must be uniform. It is quite true that the most efficient employees are those that "mind their own business" and do their day's work without paying attention to their fellow-employees. However, this type of worker is few and far between. Human nature has somehow instilled the masses with the instinct to keep one eye on the job and the other eye on the neighbor. Uniform privileges will keep the morale of the workers at higher pitch. Management can then settle back to other more serious problems. (PB802)

Privileges Must Be Uniform

"Special or Uniform Privileges"
(Pete & Bill, July 1945)

Dear Pete & Bill:

I firmly believe that Bill is right in advocating uniform privileges. Although, from an operating viewpoint,

it may be possible to allow special privileges in some departments, the workers in the other departments will not be aware of the causes which justify such privileges. Special privileges will, therefore, lead to resentment against some overseers and lower morale and efficiency generally. (PB803)

Conference Results Are What Count

"A Conference, or Just Fish Stories?" (Pete & Bill, June 1945)

Dear Pete & Bill:

No doubt the most expedient method of conducting an overseers' meeting is one with parliamentary procedure. However, the thought arises as to whether or not this type of meeting brings out the objective—discussing and ironing out all the immediate problems of the various departments. When a person is given the floor to speak he is often governed by the manner in which the meeting is being conducted. Unless such conference is held informally the speaker may not feel entirely at ease, and, consequently, may forget some of the more important problems on his mind. This is a natural and common experience.

Wise management, with an eye toward operating a more smoothly functioning unit, should adopt the "Haste Makes Waste" slogan. By so doing, the little time sacrificed in holding informal discussions would be compensated by the extra dividends derived from more efficient production. (PB804)

Conference Technique Is Best

"A Conference, or Just Fish Stories?" (Pete & Bill, June, 1945)

Dear Pete & Bill:

Personally the writer is sold on the idea that the conference technique is the best way to get supervisors of each level to share their good ideas and experiences for their mutual benefit and the benefit of their company.

We have a newly formed Foremen's Club and are planning to hold management conferences in the coming fall and winter. To get ready for this program we are holding weekly conferences for a group of 20 members of the club and they are learning the skill of conference leadership by practice so that when the educational program starts there will be a number of leaders ready to take turns leading the discussions. We are watching your column and cartoons closely to see what others think about this subject. (PB701)

Books of Interest

Survey of American Cotton Demands

RECENT TRENDS IN THE DEMAND FOR AMERICAN COTTON, by Cyril O'Donnell; University of Chicago Press, 5750 Ellis Ave., Chicago; 78 pages; $1.00.

This report, one of the studies in business administration conducted by The School of Business, University of Chicago, consolidates the mass of information that has appeared in the form of statistics, books, and articles related to the production and consumption of cotton. Analysis is made of the competitive factors affecting both the domestic and the foreign cotton market, the end uses where cotton is superior, where it meets little competition, and the relation between income level and cotton consumption. Industrial uses of cotton are outlined and the influence of present government policy on the demand for cotton is discussed. This book points out the hopelessness of trying to peg the price of cotton in a world-wide competitive market and of the practice of subsidizing cotton growers at the public expense.

The Stealing of Textile Designs

THE PIRATES WILL GET YOU, by Sylvan Gotshal and Alfred Lief; Columbia University Press, 2960 Broadway, New York 27; 103 pages; $2.00.

Spearheading a new campaign for legislation to protect commercial designs in the textile industry, is this book written by Sylvan Gotshal, New York attorney, who has played an active part in the anti-piracy fight for many years and by Alfred Lief, editor of the American Business Problems Series. Outlined is the fight that legitimate textile mills and firms have waged against the pirating of their exclusive printed designs by less reputable houses. Also it points out that relief can come only in the form of Congressional action. Reasons are marshalled for a public policy of outlawing commercial piracy, and it is stated that, if protection is possible for original creations, this protection will promote production of exclusive designs on a gigantic scale.

Training of Supervisors

TRAINING FOR SUPERVISION IN INDUSTRY, by George H. Fern; McGraw-Hill Book Co., 330 West 42nd St., New York 18; 183 pages; $2.00.

The textile industry is no different from any other in that it must train its men to take positions of overseers and other responsible jobs. This book, while not devoted to any one industry, will help the supervisor with his own problem of up-grading, or with his training of new help. Devoted extensively to the problem of employee relations and the handling of men, it covers the conference method of training and deals specifically with such supervisory problems as maintaining mental health in industry, handling problems of women workers, promoting safety, training new workers, disciplinary problems, etc.

The Textile Industry Under WPB

THREAD OF VICTORY, by Frank L. Walton; Fairchild Publishing Co., 8 East 13th St., New York 3; 272 pages; $3.00.

Written by Frank L. Walton, director of the Textile, Clothing, & Leather Division of the War Production Board from 1941 to late in 1943, this book is intended to create an understanding on the military front and on the home front of the tremendous undertaking necessary to place the country on a wartime standing and to explain why many of the measures taken were necessary if a successful war was to be waged.

OTHER PUBLICATIONS

A CAPSULE COURSE ON WOOL; American Wool Council, Inc., 1450 Broadway, New York 18; 20 pages; no charge.

GEORGIA GOES FORWARD; The Agricultural & Industrial Development Board of Georgia, Athens, Ga.; 66 pages.

WORK SIMPLIFICATION AND SUPERVISORY COST CONTROL (reprint); American Management Association, 330 West 42nd St., New York 18; 50¢.

HOW LONG
Will Capital Financing Enjoy the Present Alternatives?

This is unquestionably a favorable time for corporate financing. Rates are low, and active demand by investors offers various alternatives in preferred and common stocks or bonds.

But as reconversion progresses, changed conditions may affect the capital market. Among the new factors which could modify the present abundance and cheapness of money will be large-scale financing of consumer buying, bigger inventories, longer terms to wholesalers and retailers, costs of reconversion and modernization of plants, and final settlement of taxes and war contracts.

Does your business need additional capital with the ending of the war? This question can be answered only by an analysis of your prospective operations in peacetime production.

We are making many such studies. If you are a well established business and would like to benefit from our facilities and experience in determining the form of capital requirements, one of our partners will be glad to go into the matter with you.

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Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Weave Rooms Need Specialized Supervision

For quite a while, I have thought of the possibility of specialized supervision for the weaving department. By this, I mean that direct and indirect jobs in the department would be under separate supervision.

I suggest this plan for the weave room because it has more irregularities (changes, kinds of jobs, cleaning problems, etc.) than the carding and spinning departments. I think trouble arises not so much from the fact that weave-room problems are different as from the fact that this department has not progressed as other departments have. Frankly, I think that the weave room is 20 years behind the card room and spinning room in supervision.

Perhaps one reason for this is that these departments have been pushed to have things just right for the weave room. As a result, they have progressed in supervision, while the weaving department has not.

I know the saying, "The spotlight is on weaving" because there is the payoff; but why be too lenient? If someone should ask my advice as to which department of the mill to work in, I would suggest weaving; for there he

Powerful IS THE WORD FOR SULFRAMINE DT*

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Leading textile mills are finding Sulframine DT an exceptionally efficient and economical detergent. Chemically classified as an alkylaminosulphate, it can be utilized in almost every phase of boiling off and dyeing. As an emulsifier and foaming agent, Sulframine DT dissolves readily, and it will form rich suds even in dilutions of one to ten thousand or more parts of water. Not even the most severe water conditions can affect its phenomenal properties.

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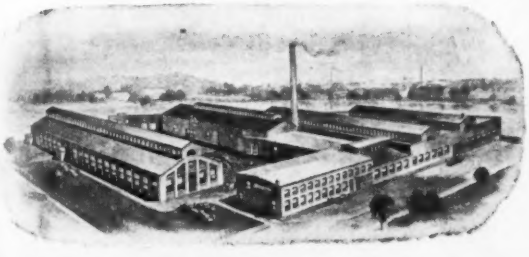

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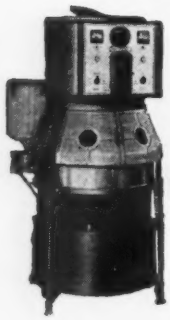
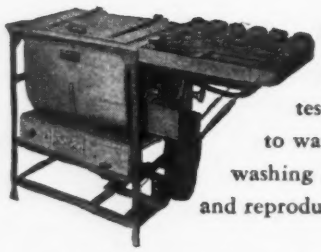
The consumer demands factual information on fading and washing of fabrics

- **FADE-OMETER**
- **LAUNDER-OMETER**
- **WEATHER-OMETER**



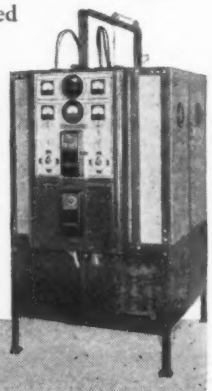
Enable the manufacturers of dyestuff and fabrics to guarantee the fading, washing and weathering qualities of materials.

FADE-OMETER— For over twenty-five years the yardstick of the textile and dyestuff industry for determining the light fastness of materials. Full automatic—safe to operate unattended over night.



LAUNDER-OMETER—The standard laboratory washing machine of the A.A.T.C.C. for testing color fastness, staining, shrinking, resistance to washing and mechanical action. All factors including washing action can be carefully controlled and reproduced identically at any time.

WEATHER-OMETER—Faithfully duplicates the combined weathering effects of sunlight, rain, heavy dew and thermal shock; accelerated to reduce years of actual weathering to a few days testing. Operates automatically without attention.



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Originators and sole manufacturers for over a quarter of a century—Fade-Ometers, Weather-Ometers, Launder-Ometers; the accepted standard accelerated testing machines used all over the world.

would make more money, have a lighter work-load, and enjoy a better time in general.

Specialized supervision over indirect jobs would mean better housekeeping, cleaner looms, better maintenance of harnesses and reeds, and more regular cloth doffing, trucking, etc. On direct jobs it would result in better warps and patterns, improved mechanical conditions, and greater efficiency at lower cost. *(R-180) J. F. Hutchinson*

Mill Man Asks for Criticism of Formula

For finding the required twist and lay gears for roving frames and the twist gear for spinning frames, I have been using the following rule for some time:

[(Present twist gear × present hank roving ÷ required hank roving) + present twist gear] ÷ 2 = required gear.

I have been told that this is not accurate because it does not take into consideration the diameter of the roving or yarn.

I would like to see this threshed out in the Round Table. *(R-181) Fred Jackson*

Supervisors Can Wreck Labor Relations of Mill

I think one of the most urgent problems facing the textile industry today is the matter of better relations between labor and management. Many overseers and superintendents create bad feelings among help by their shortsightedness and by their egotistical reaction to being the one in authority. Some go so far as to stay on the alert to give an employee the opposite of what he wants.

I know of cases in which an overseer has broken the morale of a worker by this latter practice. As far as the company was concerned, perhaps these instances had no immediate effect; but building up a bad attitude among long-term employees will sooner or later get the mill into a tight spot. *(R-179) A. P. Brown*

Canadian Mill Man Corrects Weaving Defects

It may be of interest to know some of the steps taken by this Canadian mill to keep the quality of cloth as high as possible under the present conditions of using inexperienced weavers.

A quick check-up of woven seconds at our mill showed that the flaws were

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When cotton is picked and sent to us . . . from there on in it's OUR Story. Because it is Boger and Crawford that process this cotton into knitting yarn having that all-important feature . . . Vitamin Q, "Quality". The process of insuring this *extra* Quality in our knitting yarn is expensive to us, but from users' reports it is well worth our effort. Knitting yarn is poor without Quality. So, in selecting your yarn, look for Vitamin "Q"—Quality". Every inch of Boger and Crawford yarn is steeped with Vitamin "Q".

The Quality of Boger and Crawford knitting yarn is guaranteed — the highest tribute we can pay it. Signed . . . . . .

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caused by a few improper practices, and it was these practices that we set out to control.

One of the more serious flaws, from a repair angle, was the wrong end, or wrong warp draw. These generally happen when two or more ends, side by side in the warp, break at the same time; and the weaver, when setting them up, draws them through the wrong heddles. To keep this under control, we issued instructions to the weavers that when two or more ends together broke at the same time, the weaver must have his pick-up checked by a fixer. The fixer's initials were to be marked on the cloth where the ends came down. By closely following this up, we were able to keep wrong ends at a minimum.

Long warp threads missing make sewing a costly operation and hold up delivery. Some of these are caused by: (1) An end breaking and wrapping around other ends, thus maintaining tension and preventing the drop wire from making contact to knock off the loom; and (2) the drop-wire system being out of order. Regular testing of the drop wires and instructions to weavers to watch the back of the looms for tangled ends helped reduce this trouble.

Another source of seconds was one we call "felters." These are known in many mills as floats. It is a series of warp ends or filling picks floating over other ends or picks, instead of interlacing with them. Long-tailed knots which tangle with the warp yarns, broken warp ends which wrap around other ends and prevent them from weaving, and accumulations of lint gathering on warp ends and holding a group of them together are responsible for many of these defects. Insistence that these floats be picked out by the weaver and instructions to watch the back of the loom have helped to reduce the number of these coming through.

Mispicks and broken picks were sometimes a serious trouble. These are often caused by weak places in the yarn, by faulty winding, or by the cutter or the filling stop motion being out of order. To help guard against these, we test the stop motion at regular intervals and request the weavers to report any yarn that is breaking more than usual.

We found that some of our weavers were using the wrong yarn to tie up broken ends. Flaws in the cloth often resulted when a weaver was running warps of two or more similar shades. We learned it was helpful to give a weaver a short explanation when such

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NEUTRAL, DUAL PURPOSE PERMANENT FINISHING AGENT

THIS EFFECTIVE CATIONIC SOFTENER CAN BE USED IN ALKALINE, ACID, OR NEUTRAL SOLUTIONS, TO GIVE YOU THESE 4 QUALITY ADVANTAGES:

★ **DURABLE FINISH,** resistant to removal by repeated laundering or dry cleaning.

★ **SOFT, GREASELESS FINISH** for all cellulosic fabrics.

★ **UNEXCELLED SOFTNER-PLASTICIZER** for use with urea-formaldehyde or melamine-formaldehyde crush resistant treatments.

★ **LITTLE OR NO EFFECT ON SHADE** of dyed fabrics, and light fastness of direct colors.

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These lamps are standard for most Infra-Red tunnels, ovens, and other production line installations. In adapting Infra-Red to your equipment remember that Infra-Red is a science. *Maximum efficiency is secured only with scientifically engineered equipment.* We will gladly furnish names of manufacturers of such equipment. Address — Wabash Appliance Corporation, 345 Carroll Street, Brooklyn 31, N. Y.

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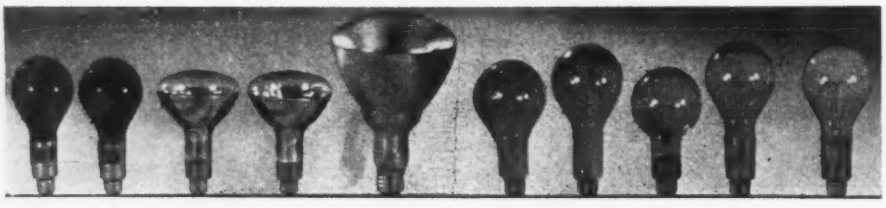

a warp was put in his loom, and we have been without this particular trouble for some time.

Whether or not the following note helped us keep up quality, we are not sure; but it was issued to each weaver personally:

"Good workmanship means a high quality product. That means a satisfied customer. A satisfied customer means more orders, and these are the things that will keep the looms busy and assure a continuance of good wages when postwar competition appears on the scene."

These are a few of the steps we have taken to control quality; and while we haven't been 100% successful, we feel that the results have justified our efforts. *(R-177)*

Higher Wages Benefit Management and Labor

I have been in the textile industry for over 35 years. I have served as apprentice and operative and am now in the management end. I want the industry in which I was born to make those economic and social gains which are long overdue.

Both management and labor will benefit from higher wages. It is unfair that employees of a low-wage industry be penalized when buying the wares of a high-wage industry. Such inequality results in a low social level for the employees of the former industry. The workers are looked down upon; and high-quality, intelligent, and well-educated labor is not attracted to the industry.

I believe, furthermore, that intelligent labor is more reasonable in its demands on management. It is also more efficient and insures the manufacture of better-quality products with less waste. The operatives make better executives when promoted, handling help more competently and humanely. They are more receptive to advanced ideas in manufacturing and more interested in research.

For these reasons, higher wages result ultimately in lower costs, which in turn make the market of the industry larger and more secure. *(R-175)*

Mills Should Advertise Good Points to Public

Although many concrete changes have been made in the policy of mill management on the lookout for employees of exceptional skill or ability, young workers who have finished

Fewer Broken Ends on Twister Frames—*with*

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NON-FLUID OIL

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

Most leading yarn and thread mills find that NON-FLUID OIL insures greater production from twister frames by keeping them in constant operation.

By reducing traveler friction it cuts down the number of broken ends, stops overstrain on yarn and does away with much blackened yarn. This insures more even operation with cleaner yarn of better quality at lower production cost.

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IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

There are other savings also: for NON-FLUID OIL lasts longer and need be applied less often than other lubricants—thus saving on both lubricant and application cost.

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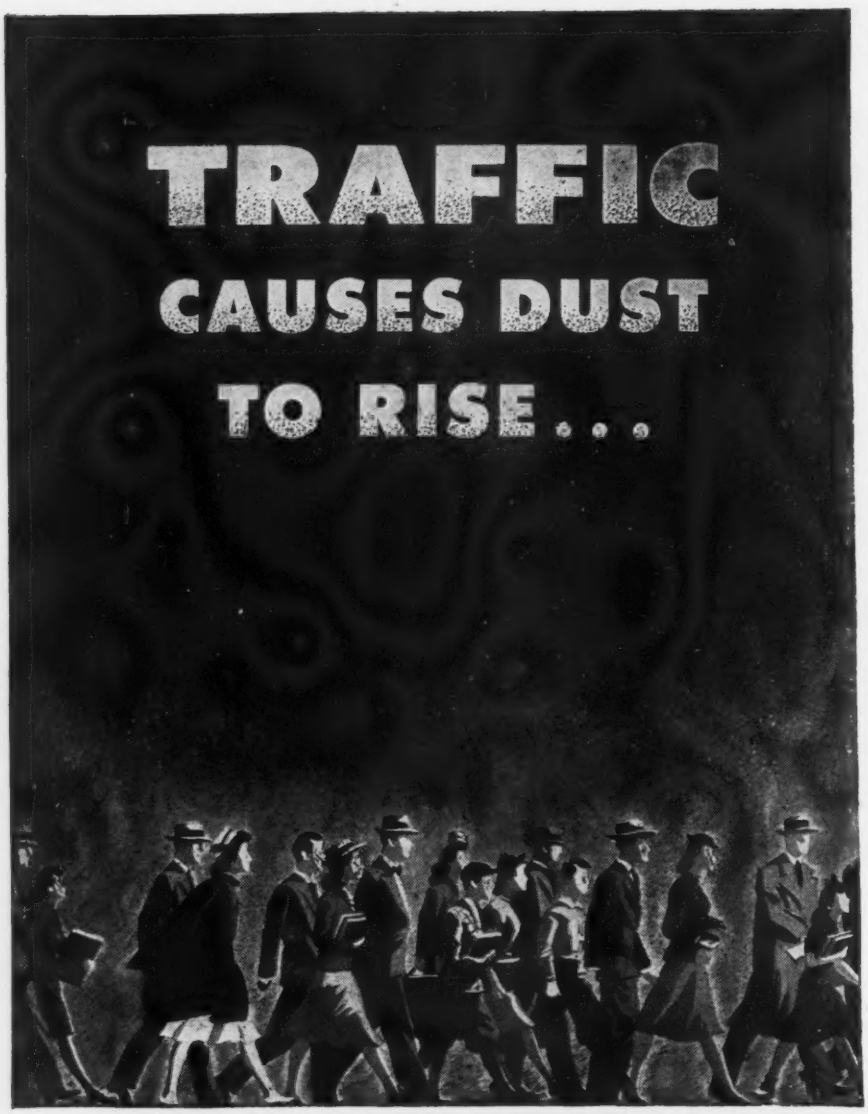
NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our exclusive manufacture.



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CONTROLS DUST

Westone, the chemical floor treatment in liquid form simplifies floor maintenance problems. It continuously improves floor appearance, penetrates rapidly and evenly and *actually seems to become part of the floor material itself.* Westone controls dust in room atmosphere because the presence of dust in room atmosphere is due not so much to open windows as it is to floor traffic. The problem is to *keep the dust from rising.* Westone has, in addition to its other properties, a peculiar *affinity for dust* and when properly used to maintain a floor, the atmosphere will be comparatively free from it because foot traffic will not cause the dust to rise. Westone is very economical to use.

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WEST DISINFECTING Company
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school have a tendency to avoid textile employment.

This fact is largely due to the failure of the industry to advertise its advantages. A well-organized plan for acquainting the public with the opportunities offered by the mills should be brought before the higher school grades and the employment agencies.

Such a plan should utilize several means of presenting its story. Groups of manufacturers in a community could film their activities for public showings. Carefully selected employees from the various departments could give short talks on the work they do. Local Chambers of Commerce and civic groups could organize committees to boost this most essential work.

The textile industry has a great future immediately ahead. The production of synthetic fibers, the introduction of new chemical processes, the advancement of machine design, and the element of safe operation should be great factors in selling the industry to the public. (*R-178*) *James C. Milne*

Complimenting Workers Can Build Good Will

If a foreman cannot discover a reason for praising a worker on the average of once a month, the fault may be simply a matter of oversight or failure to realize that honest praise takes the sting out of corrections and criticism.

Some foreman seem to have failed to train themselves in seeing the little opportunities for building good will by a few words of commendation. The following list of reasons for complimenting a worker can serve as a beginning:

Promptness in settling down to work.

Long personal safety record.

Regularity on the job.

Quick thinking which avoided mishap in the department.

Outside activity which reflected credit to the mill.

Advanced community relations.

Organizing ability in meeting minor emergencies.

Rendering first aid.

Cooperating in reaching departmental objectives.

This list can be increased indefinitely by the foreman himself as he progresses in the habit of building good will. (*R-183*)

The *New* SMITH-DRUM *TWO-WAY* Package Dryer

This Machine employs an entirely new principle which cuts drying time 60% to 75% and saves up to ½c per pound of yarn. It uses less electricity . . . prevents migration of color . . . eliminates salt deposits. Yarn is delivered in better condition because of short drying cycle. Direct colors can be turned out in less than 3 hours. Drying is more uniform than by any other method. Write, wire or telephone for complete details.

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for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package extracting, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

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HANDLING—the Common Denominator of PRODUCTION

LET MEN DIRECT POWER—NOT GENERATE IT!

Cubic transportation—Lifting and placing as well as carrying—is essential to efficient handling. *Where* a product is handled is just as important as *how* it is handled.

Towmotor, capable of moving materials in any plane from floor level to a 20 foot height, provides a means of utilizing all available space. The Towmotor DATA FILE contains details. Your copy is ready now.

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Questions and Answers

Steam Processing Has Many Advantages

Technical Editor:

We are interested in the process described in the article, "Steam Processing Scours Cotton Continuously," which appeared on page 94 of the July issue of TEXTILE WORLD. We would like to know: (1) is this process as effective as the old kier-boiling system, (2) what is "Textone," and (3) does the bleaching done by this method compare in quality with that done by the chlorine or peroxide processes? (9067)

The reply to the first question depends upon what is meant by "effective." If you wish to prepare a fabric that may be dyed or bleached by the continuous steam-scouring method, the answer is that it can, and is, being done. Some millions of yards of cloth have been satisfactorily prepared for dyeing, while other millions have been successfully processed in bleached finishes. If you desire completely to remove the non-cotton content of such fabrics, as is desirable in the production of surgical gauze, present continuous steaming methods may not be satisfactory because they may not take out all of the cotton waxes, pectins, sizing materials, etc. However, these specific uses of cotton cloths are rather rare; and for the usual bleaching, dyeing, and finishing operations it is unnecessary to reduce such cloths to pure cellulose.

The advocates of the continuous steam-scouring method believe it offers much in uniformity of treatment, since each yard receives the same mechanical and chemical treatment as every other yard. Thus, this method of preparation avoids the difficulties encountered when goods are piled in a container, such as a kier, and the liquor circulated through the mass of fabric. The condition known as "channeling" and the difficulty of washing all parts of the kier uniformly are avoided in the steam-scouring process. It is evident that this process is even more effective than the old kier-boiling

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. OCTOBER, 1945

GOODYEAR NEWSPAPER AD DECLARES WORLD WILL RIDE ON RAYON TIRES

In the first public announcement to come from a major automobile tire manufacturer, Goodyear Tire and Rubber Company has made it clear that the company intends to have America...and "the whole world"... riding on rayon cord tires. The announcement was in the form of an advertisement in 100 newspapers in 87 cities across the country, during the week of September 13.

Tomorrow, the whole world will ride on rayon...and

TIRES MADE WITH RAYON ARE ANOTHER

GOODYEAR "FIRST"!

GOODYEAR

MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER KIND

The promises held out in the text were that rayon cord tires from Goodyear would bring a new era in motoring, with car owners enjoying such mileage, safety, comfort, and gasoline economy as they have never had before.

Reasons for the rosy motoring picture with rayon were that Goodyear has found rayon cord stronger, that it creates less friction in flexing, and that it therefore generates less heat.

"Plunging into war production with synthetic rubbers," the company adds, "rayon almost literally saved our lives. For without rayon, neither America's industry nor America's armies could have kept going."

Goodyear's confidence in the coming rayon cord tires is perhaps best illustrated in the following:

"...we *can* tell you that a set of tires which will probably last longer than you will want to keep your car is no longer just wishful thinking."

WHEN DO WE GET MORE RAYON?

In recent trade advertisements, American Viscose Corporation issued the following statement on the supply of rayon yarn and staple fiber:

"Nothing would please us more than to be able to answer that question clearly, bluntly, without beating around the bush.

"But we can't. For peace has settled only one of the uncertainties affecting that question. While government controls on distribution have been lifted, we still have a serious and time-consuming reconversion job to do.

"We can promise you this—there is no organization anywhere working harder to get you more yarn and get it to you with greater speed, than the American Viscose Corporation."

A.V.C. WILL BOOST RAYON OUTPUT 100 MILLION POUNDS

The American Viscose Corporation has completed plans for an expansion program that will increase its rayon production by approximately 100,000,000 pounds a year, it has just been announced.

The main part of the program will be construction of a new plant at Radford, Va., which will produce approximately 55,000,000 pounds a year of viscose rayon staple. This product is used chiefly in spun rayon fabrics.

The remainder of the increased production will be obtained by enlarging the company's acetate rayon plant at Meadville, Pa., and its viscose rayon staple plant at Nitro, W. Va.

At the present time, A.V.C. operates seven plants. Total current production of the company is at the rate of about 260,000,000 pounds annually.

Complete facilities for rayon textile research and production are provided by The Textile Research Department of A. V. C. at Marcus Hook, Pa. View depicts study of yarns from magazine creel passing through the porcelain guide board for proper arrangement in the warp.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

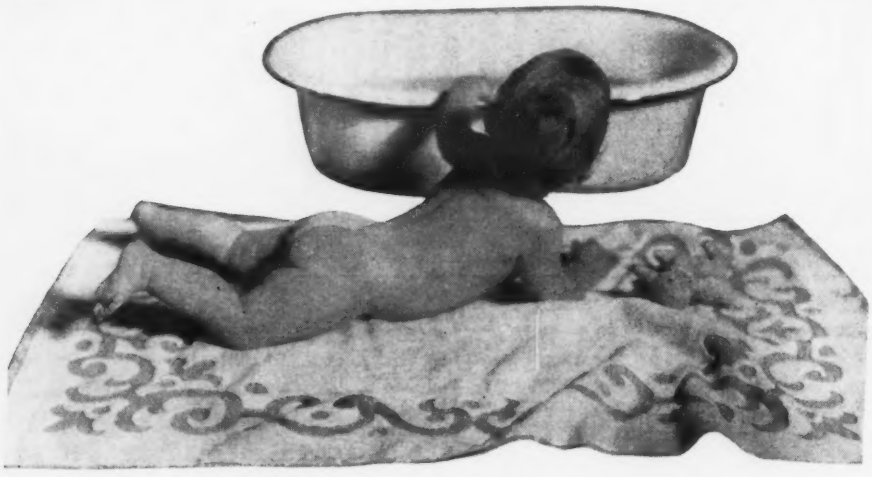
America's largest producer of rayon yarns and staple fibers

Offices: 350 Fifth Avenue, New York 1, New York; Charlotte, N. C.; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off.



Cotton Yarns for Toweling

PACKAGE DYED by GLOBE

One of the many uses made of cotton yarns dyed by Globe is in weaving luxurious towels for every purpose. Matching colors closely on repeat orders is assured by our laboratory control system, worked out over many years of dyeing service to quality mills.

Globe is equipped to give any kind of package or skein dyeing that may be best for a customer's needs.

Bring your yarn dyeing problems to Globe.

YOU CAN RELY ON GLOBE

We do PACKAGE DYEING on tubes, skein and warp dyeing, warp mercerizing.

Yarns we process include cotton, rayon, acetate, worsted, spun rayon, nylon, aralac, blended and novelty yarns.

Globe DYE WORKS CO.

1865 1945

FRANKFORD, PHILADELPHIA 24, PA.

system because of the resulting uniformity of preparation.

The bleaching compound Textone, mentioned in the article, is known chemically as sodium chlorite, $NaC10_2$. It contains one more oxygen atom than does the more familiar and common bleaching agent sodium hypochlorite, NaOC1. When acidified, this compound releases chlorine dioxide, $C10_2$; and the manufacturers state that, while chlorine dioxide is a powerful enough oxidizing agent to react on the organic coloring matters naturally present in cotton fibers, it is not active enough to react with cellulose itself; and therefore, it will not create oxycellulose nor the condition known as "tendering."

When the bleaching operation is carried out under properly controlled conditions and with the requisite quantities of acid and Textone, the resulting white is said to be equal to that obtained by either the chlorine (sodium hypochlorite) or the hydrogen peroxide processes. We understand that the sodium chlorite bleach (Textone) will also maintain maximum tensile strength, and goods so bleached do not show a tendency to turn yellow in any appreciable degree on being stored.

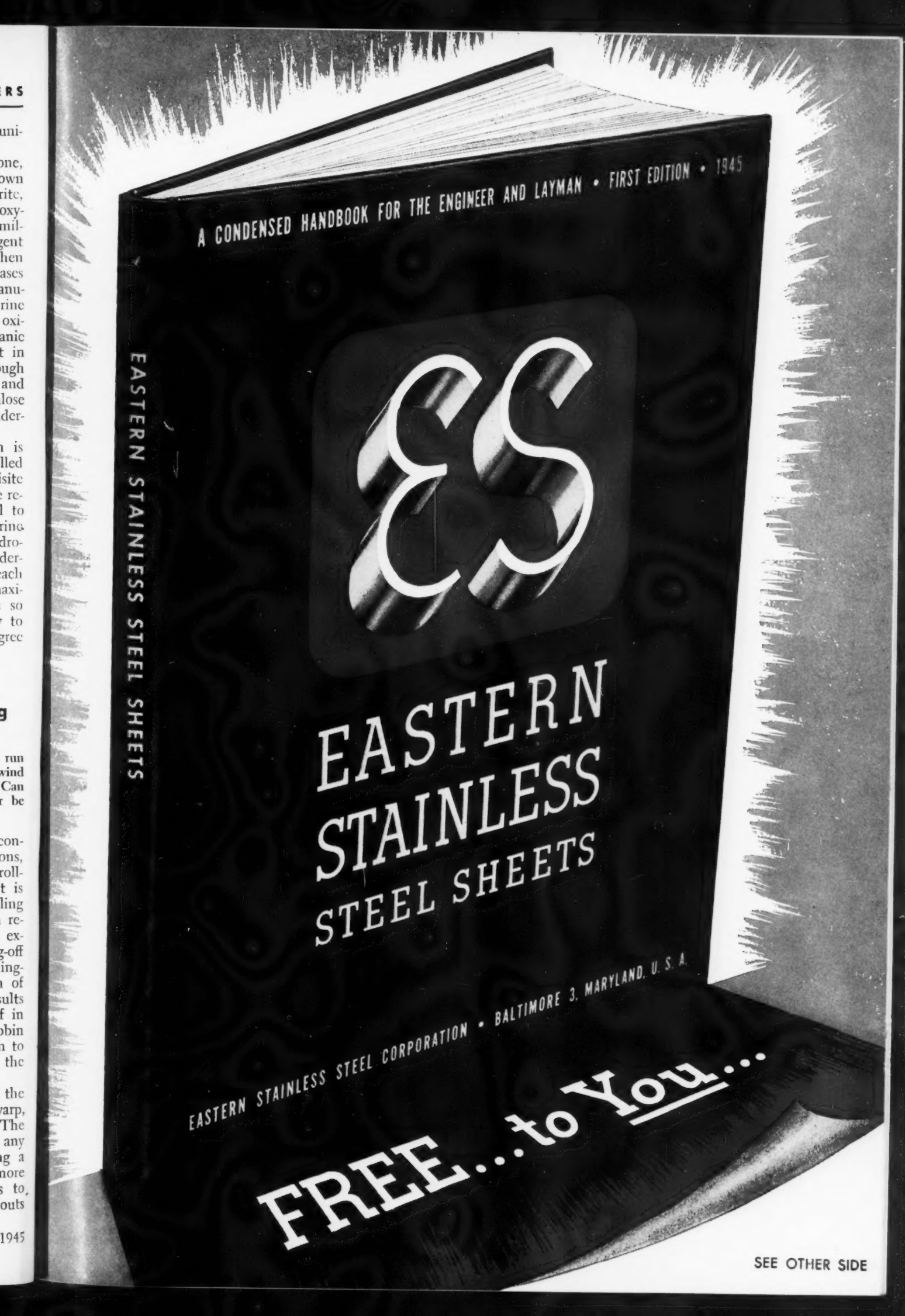
Filling-Wound Yarn Not Suitable for Spooling

Technical Editor:

Spinning-frame front rolls may be run at higher speeds when using a filling wind for laying warp yarn on the bobbin. Can the Barber-Colman automatic spooler be set to handle a filling wind? (9066)

The Barber-Colman spooler is constructed to very exacting specifications, and no means is provided for controlling the tension of the yarn as it is drawn off the bobbin. When spooling warp-wound yarn, there is enough resistance to unwinding to prevent excessive ballooning and sloughing-off of the yarn; but when spooling filling-wound yarn, there is a minimum of resistance to unwinding. The results are a balloon which distorts itself in striking against all sides of the bobbin pocket and a tendency in the yarn to slough-off and kink between the bobbin and the thread guide.

The writer has experimented on the Barber-Colman spooler with warp, combination, and filling winds. The results obtained indicated that any advantage to spinning in running a combinatoin or filling wind was more than offset by the disadvantages to spooling. The number of throw-outs


A CONDENSED HANDBOOK FOR THE ENGINEER AND LAYMAN • FIRST EDITION • 1945
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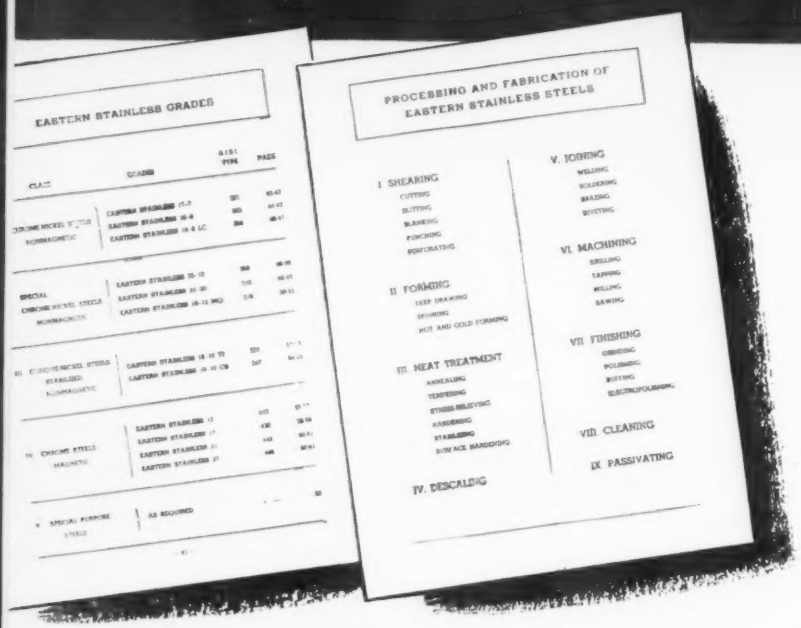
NOW— THE NEW HANDBOO
BY EASTERN STAINLESS STEEL



These two sub-indices give you an idea of what it will be worth to you to have this book handy on your desk. Have you ever seen any compilation of facts on stainless so *complete*—so *well organized?*

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There's not a page that's not *authentic* in EASTERN's handy new "encyclopedia" on Stainless Steels. And no wonder—the book was actually compiled by top stainless steel specialists . . . EASTERN key men who know not only their own jobs but a good many of your problems too! You'll find they've anticipated your questions and arranged the answers so when you want one you don't have to thumb for it!

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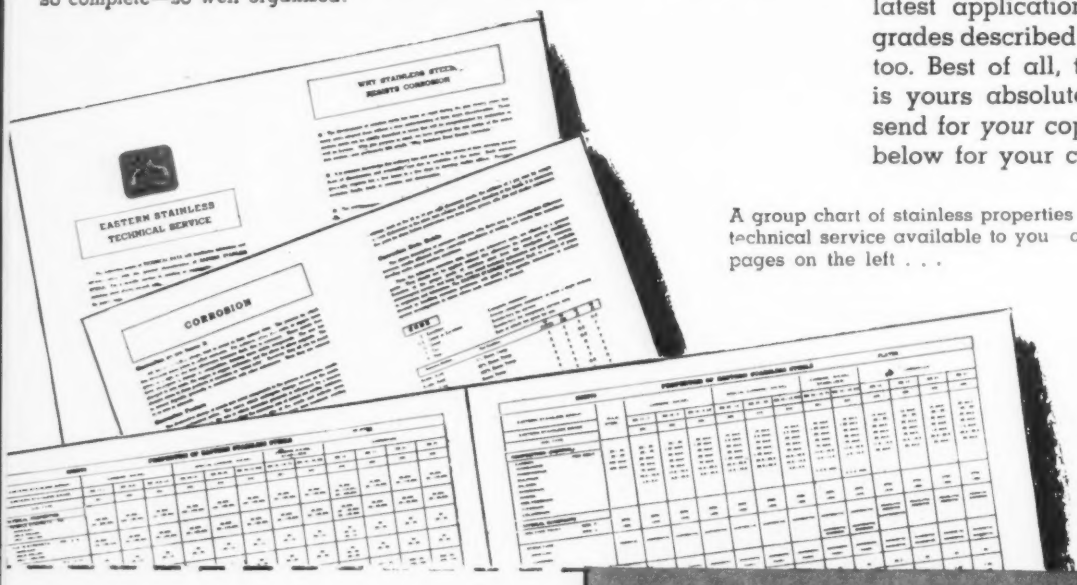

A group chart of stainless properties and notice of a valuable new technical service available to you—*all in one book*. A few sample pages on the left . . .

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ask EASTERN *for the answer*
when STAINLESS *is the question*

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(partial bobbins of yarn which broke before unwinding completely and were thrown out by the spooler with the empty bobbins) increased considerably when changing from a warp to a combination wind; and when changing to a filling wind, the throw-outs became excessive.

It is interesting to note the answers to this question in the "meeting-by-mail" of the Textile Operating Executives of Georgia (September issue, TEXTILE WORLD). Of 13 mills giving conclusive answers, eight use the warp wind and five use the combination wind. None of them uses the filling wind.

Dobby Cotton Looms May Use Rayon Filling

Technical Editor:

We have the following looms in our plant: Draper Model E, widened from 40 to 60 in., 16-harness dobby automatic bobbin-change; and C & K Model C-4, 64 in., 25-harness dobby 4x1 automatic bobbin-change.

Is it practical to make drapery and ticking fabrics on either of these looms using rayon filling and the automatic bobbin-change motion? We want to use 150-den. and 300-den, filling and quill it on our regular filling bobbins. Warp will be cotton. (9069)

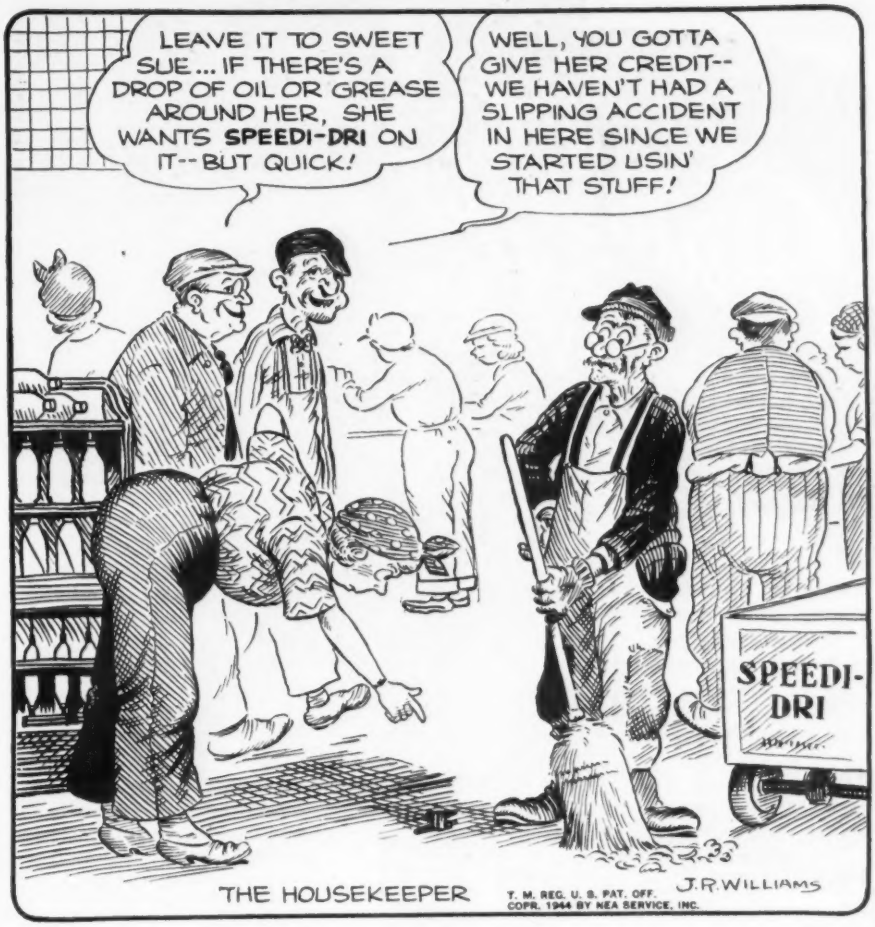
It is possible to weave either 150-den. or 300-den. rayon yarn on these looms, using the change motions. However, there are certain precautions necessary in order to secure a satisfactory production.

One of the most important requirements in the weave room is controlled humidity. Rayon filling yarns will give plenty of trouble if a hot, dry condition prevails. A relative humidity of 60 to 65% is usually recommended, but the best figure for a particular mill will be arrived at after making a few tests. Generally, a lower humidity is required for running rayon than cotton.

Dull rayon yarns are more difficult to run on transfers than bright yarns, but they will result in fewer defects such as rough cloth, ballooning, etc.

Sloughing-off may give trouble until everyone working with the yarn becomes familiar with it. The 300-den, bright rayon is exceptionally troublesome in this respect. A longer traverse stroke usually solves this problem. One odd fact about the 300-den, rayon is that some lots may cause trouble in winding, while others do not. When winding trouble arises, the fixers must search for the right stroke and tension. As a last resort to correct

OUT OUR WAY


LEAVE IT TO SWEET SUE... IF THERE'S A DROP OF OIL OR GREASE AROUND HER, SHE WANTS SPEEDI-DRI ON IT--BUT QUICK!
WELL, YOU GOTTA GIVE HER CREDIT-- WE HAVEN'T HAD A SLIPPING ACCIDENT IN HERE SINCE WE STARTED USIN' THAT STUFF!
SPEEDI-DRI
THE HOUSEKEEPER
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SPEEDI-DRI is a white, granular material that absorbs oil and grease like a blotter absorbs ink. It puts an immediate non-slip, safety-carpet under your workmen's feet. In time, it will even pull the old deposits of oil and grease out of wood, concrete or steel floors, bringing back the original, clean surface.

SPEEDI-DRI pays for itself many times over: In fire losses—it is non-combustible and fire-resistant. In man-hours and hospitalization saved—it reduces slipping accidents. By the elimination of expensive cleaning equipment, caustics, dangerous solvents, and excessive porter-labor—all you need is a shovel to put it down and a stiff broom to sweep it up. In production time saved—SPEEDI-DRI is applied and removed without stopping a single machine. Write your name and address on the margin of this page for complete data—and a FREE SAMPLE.

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South, Midwest & West Coast — Waverly Petroleum Products Co., Philadelphia 6, Pa.

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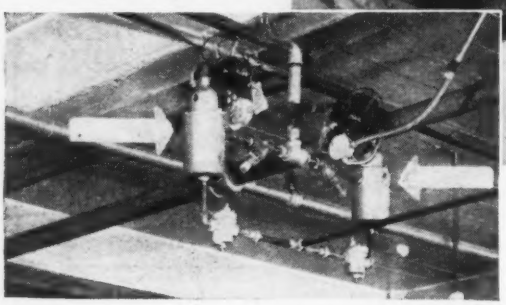
OIL AND GREASE ABSORBENT

Below: Humidifier installation at large Kansas City, Mo. plant.



Above: Armstrong humidifier installation at Massachusetts textile mill.

. . . for accurate, dependable humidification

• Armstrong steam-type humidifiers maintain relative humidity at a predetermined level automatically, within close limits, and operate with a minimum of attention and maintenance. Installation costs are moderate, and operational costs are usually less than one cent per 24 hour day per 1,000 cu. ft. of space humidified!

These and many other Armstrong features save money for textile plants. Cotton, wool, hemp, and other moisture-absorbent materials give off moisture to dry winter air, become brittle and lose their quality.

BULLETIN 158 has valuable information on humidification problems in textile plants. Prices and data on Armstrong humidifiers are included.

Send for a copy today.

ARMSTRONG MACHINE WORKS
872 Maple Street, Three Rivers, Michigan

ARMSTRONG *Steam Type*
UNIT HUMIDIFIERS

sloughing-off, the wind from the butt to the nose of the bobbin may be tapered slightly.

On the C-4 looms, it would be better to operate only one shuttle of the 4x1 automatic bobbin-change, using only the top box. Some mill men do not favor this practice, but one shuttle on a one-yarn weave will yield more production and better-quality drapery. The ticking fabrics may not have high-quality requirements, and the C-4 looms could be operated on two shuttles, unless colored work is run.

Fur should be used in the shuttles, and it should be placed with the fur-lay pointing toward the shuttle eye. If small ringlets of yarn form in the barrel of the shuttle, the strip of fur should be cut out through the center to reduce the fluff. This reduces the tension on the yarn and allows it to unwind more readily. If the fur points backward in the shuttle, the yarn will break easily.

The 150-den. rayon yarn must not be handled roughly. Battery fillers and bobbin winders should be cautioned on this point.

Comments on Monofilament Article

Technical Editor:

In the April issue of TEXTILE WORLD, page 123, is an article by Mr. Albert Frantz entitled, "Preparation Differs For Monofilament Yarns." Under a paragraph headed "Nylon Leno," Mr. Frantz points out that in producing a nylon leno mesh from fine monofilaments, it is impossible to warp satisfactorily on the cone creel because of whipping action of the balloon.

I believe I am safe in saying that the only monofilament weaving experiments which have been conducted have been in connection with the war effort and under our supervision. There are some existing screening contracts involving monofilament —either 330 den., 1 fil. or 630 den., 1 fil. nylon—but they have nothing whatsoever to do with the leno constitution. The yarn was supplied on spools and not on cones, and we know of no attempts to operate from a cone creel. We, therefore, are very much interested in the basis for Mr. Frantz's statements, and would greatly appreciate a clarification by him as to the facts which led to his printed statement.

Mr. Frantz makes other statements throughout the article that are not totally supported by current facts and practice—such things as the necessity for steel beams on all monofilament yarns. Obviously, there are other monofilament textiles besides nylon, and his statement with respect to these competitive products may be absolutely correct. We do not have information on them with respect to the necessity for steel beams. (9045)

The purpose of this article was to

HUNTER
Continuous Range Cloth Carbonizing
The Newest Advance in Carbonizing Operation Consisting of
A Modern Hunter Acid Tank,
Pneumatic Heavy Duty Squeeze Rolls and Carbonizing Dryer
Operating as a Synchronized Unit with Patented Range Drive
HOW CARBONIZING IS EFFECTED
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How TO PIECE CARBONIZE WITH CONTROLLED TENSION AND WITH NO LOSS IN WIDTH OR WEIGHT—AT HIGH SPEEDS

We cordially invite you to write for the new brochure pictured on this page. It will tell you how Hunter offers any mill the newest advantages in carbonizing equipment with performance pre-tested and production guaranteed and cost determined before you install the equipment.

It will tell you how this modern unit, consisting of a lead lined Acid Tank, Pneumatic Heavy Duty Squeeze Rolls and Carbonizing Dryer, operates as a synchronized unit with patented range drive.

It describes in complete detail the new Hunter Patented Range Drive which affords you these important aids to the salability of your fabric:

a. Uniform tension on goods throughout the unit.

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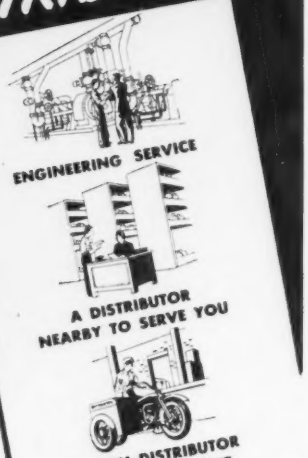

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Located in leading industrial centers, our Distributors have provided quick, readily accessible, and complete valve service throughout the nation.

In addition to supplying high quality, long life Lunkenheimer Valves, they have assisted maintenance men in the solution of both operating and maintenance problems.

This service isn't new...Lunkenheimer Distributors have been rendering it for many years in the past, and will continue doing so in the future. For this Distributor set-up is a basic, permanent part of the Lunkenheimer way—the *better service* way.

You can always depend on your nearby Lunkenheimer Distributor for expert, experienced aid in the solution of valve maintenance and operating problems. Call on him!

The Lunkenheimer Co., Cincinnati 14, Ohio, U. S. A. (Offices: New York 13, Chicago 6, Boston 10, Philadelphia 7. Export Department: 318-322 Hudson St., New York 13, N. Y.)

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acquaint many textile men, unfamiliar with monofilaments, with possible unapparent trouble when taking on commitments with a yarn, especially in learning the "how" of handling.

The following appeared in the paragraph "Nylon Leno": "First, we will take the finer gages of monofilament yarns. Included here is the nylon leno mesh of fine monofilaments." You will note in the first sentence that no reference to nylon was made—in the second, we include nylon and refer to it as leno mesh. This statement, therefore, would take in many other monofilaments, of which there are some much finer than those monofilaments used in upholstery fabrics. Also note in the paragraph that the reason why monofilaments would be difficult to warp on high-speed warpers from a cone creel is given. It would be possible to reduce the speed and warp from cones some of the very fine monofilaments, but not practical. The reason, of course, is ballooning yarn. The same trouble is encountered on other yarns; and, when such trouble occurs, it would be best to warp on some other system.

Referring to the second paragraph, the writer doubts that the inquirer supervises such well-known monofilament yarns as Saran and Plexon, just mentioning two of some of the well-known—or, should we state, of the little-known—monofilaments? From what little is known, is it not true that nylon monofilaments are referred to by "deniers," whereas Plexon and some other of the wire yarns are referred to by "gages" as the measurement term?

But to consider nylon only, can any yarn producer know that yarn placed on assignment or commitment is processed according to exact specifications of certain pre-experiments? Yes, the reed, warp count, and pick count are there—but were manufacturing details carried out to the letter? If so, then progress stops.

Is it not a well-known fact that short cuts and gadgets resorted to by the "little" firms are the reason why they are competitors to the "big" fellows?

The article did state, "Necessary on all monofilament yarns are steel beams." Even when running monofilament bands in conjunction with other yarns, producing stripes, the use of steel beams would not be an absolute requirement, but would be an ideal due to other reasons. (See next to the last paragraph on page 125, April issue, TEXTILE WORLD.) The use of steel beams is necessary as can be seen by the following:

Supposing finer deniers of monofilaments are warped. If warp density is

IN the processing of new textile fibers, things you may never have thought much about suddenly become important. The *quality* of the water you use, for example.

The impurities that water contains could easily disturb chemical reactions, spoil the finish of fabrics, cause spotty, off-color dye lots.

But that sort of thing doesn't happen with Permutit* Water Conditioning equipment. Permutit *removes* these impurities . . . gives the textile mill complete control over the quality of its process water, and of the finished product.

For finer fabrics, for more efficient mill operations, put *Permutit-Conditioned water* in your postwar plans. For details on how to do it, write to The Permutit Company, Dept. B, 330 West 42nd Street, New York 18, N. Y., or Permutit Co. of Canada, Ltd., Montreal.

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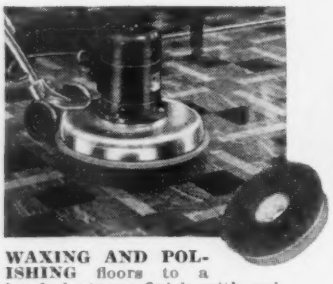
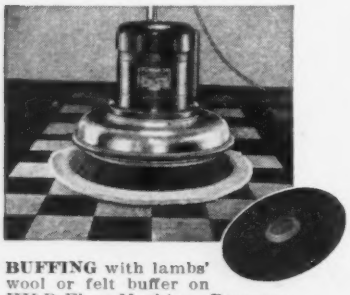
KEEP ALL YOUR FLOORS CLEAN AND SLIP-SAFE with the HILD FLOOR MACHINE



WAXING AND POLISHING floors to a hard, lustrous finish with polishing brush on HILD Floor Machine.



BUFFING with lambs' wool or felt buffer on HILD Floor Machine. Removes streaks, goes under radiators, polishes waxed cove baseboards.

STEEL - WOOLING with pad and holder on HILD Floor Machine. Used for dry cleaning polishing, scrubbing, wet buffing of penetrating seals, etc.

SANDING disc on HILD Floor Machine sands wood or cork tile. A 3-inch flat counter-sunk plate holds sandpaper firmly to rubber padded metal disc.

Plain-Handle Standard Floor Machine
Used to scrub, wax, polish, buff sand, grind and steel-wool floors of all kinds.

Portable Tank Type Shower-feed Floor Machine
Scrub floors with the Shower-feed Brush shown below. Also waxes, polishes, buffs, sands, grinds and steel wools.

HILD Floor Machines are designed for use with easily interchangeable attachments to condition and maintain floors of all kinds . . . either in the mill or in office areas. They speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. Scrubbing with the Tank-Type Machine and Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts Soap costs . . . does not splash water on machinery or furniture . . . requires less time and labor to pick up dirt and water.

The HILD Machine operates so easily that either a man or woman can run it for long periods without tiring. It is practically noiseless in operation. The G. E. Capacitors type motors have no carbon brushes or commutator to gather dust and lint or wear out . . . made for long, trouble-free service.

HILD Patented Shower-feed Brush

This diagram illustrates the famous HILD Shower-feed principle. Scrub-soap solution is fed from the storage tank to the back of the brush...then passes through accurately spaced holes penetrating the brush back *between each row of bristles.* Solution is whipped up by the bristles into rich cleansing suds and evenly distributed under the brush area. Result: Speedy, thorough scrubbing action with minimum soap solution. The brush is refillable.

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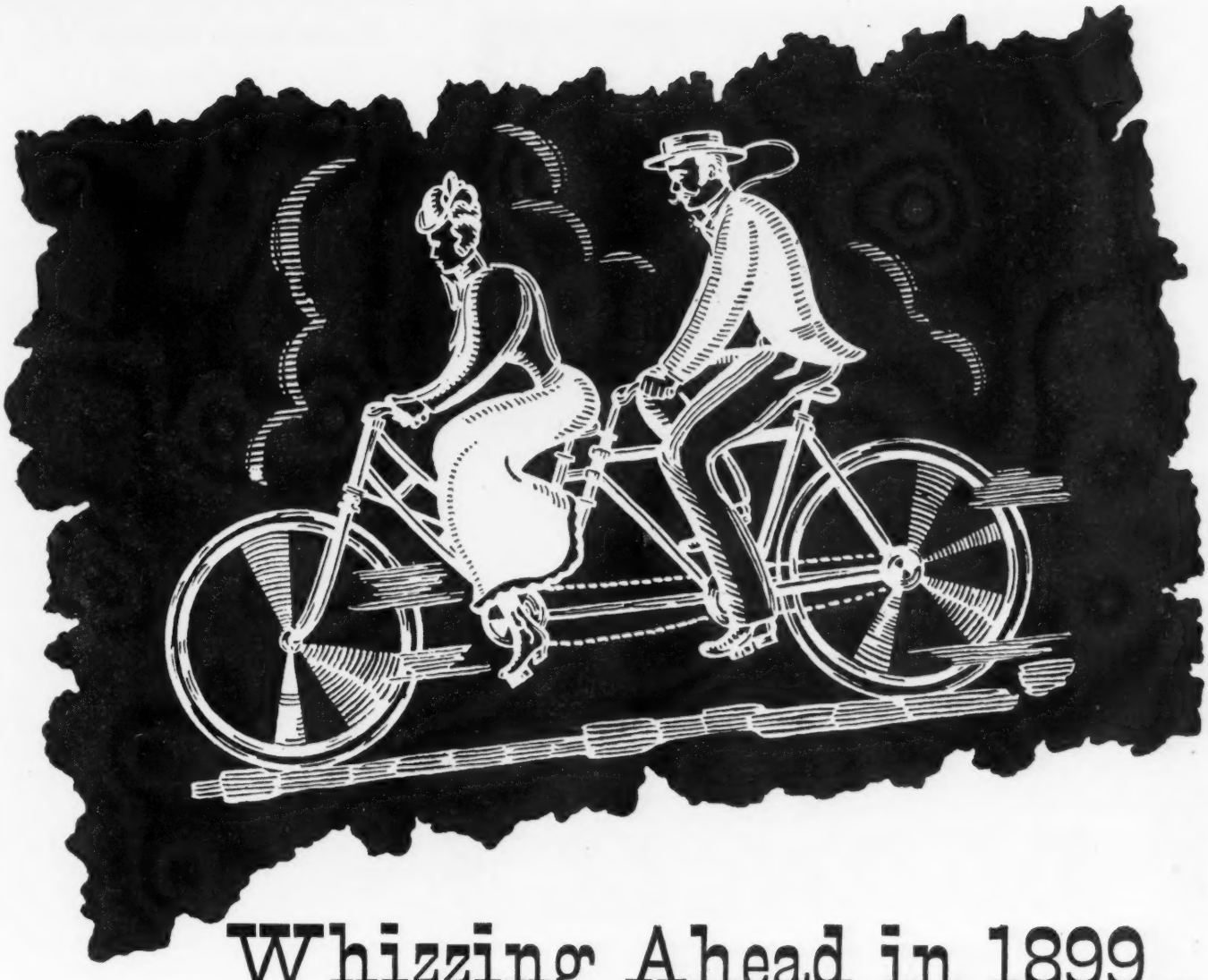
too light, the outside yarn presses into the bottom layers of yarn and is difficult to weave off. On experiment warps of a few hundred yards, this trouble would not manifest itself. But suppose the warps are 5,000 yd. long, how would it be possible to weave off the last 1,000 yd.? Cut the warp out and rebeam? Surely this is expensive and can be prevented if steel beams are used and heavy tension is applied at the start of the yarn on the beam. Wood beams can be used, but suppose the barrel is crushed? This will happen on a warp of several thousand yards in length. The yarn will weave off if there is no loose yarn. But if the next warp would be, for example, a 60-den. nylon or some other light weave, when the yarn has been woven to within 500 yd. (approximately) of completion, barre will appear in the fabric at points equal to every half circle of the beam. (These statements are from actual case histories.)

Another surprising action of heavier monofilaments, such as the heavier gages of Plexon, is found when running on wood beams having adjustable flanges that screw in or out on short lengths of steel tubing. The wood will crush down between each section of the end tubing. When the warp is being completed, it will be difficult to weave off all the yarn because the yarn on the steel portion will be normal; whereas on the crushed wood barrel section, the yarn will appear to be masses of loose sections. (Albert Frantz)

WPB Personnel Want Jobs

The War Production Board has set up machinery to help find jobs for the men and women members of its staff whose wartime achievements helped direct the greatest production drive in the history of the world, according to J. A. Krug, chairman of WPB. Liquidation of the Board, Mr. Krug said, will mean that an efficient staff of able men and women—many of them of outstanding ability in industrial problems—will be available to private industry.

In order to help in the securing of the services of these people, a WPB Industry Personnel Committee has been formed, with headquarters in Room 2060, Railroad Retirement Building, Washington, D. C.



Whizzing Ahead in 1899...

...“on a bicycle built for two.” Great sport . . . and you really went places, too, back in those days when Momma’s best friend was her set of “tidies” and Poppa’s was his mustache cup.

At that same time, Aberfoyle was also *going places*. The Galey weaving mill had recently been incorporated under the Aberfoyle name, and had added dyeing and finishing of yarns and fabrics to its weaving business. Whizzing ahead in 1899, it constructed and operated the *first* automatic warp mercerizing machine in America . . . This same spirit of pioneering into newer fields, and constant improvement on the basis of thoroughly-tested and investigated facts has brought Aberfoyle to its present position of eminence, with branches in the South, in Canada, and in Australia . . . This past war had demanded almost exclusive military use of Aberfoyle Yarns. As peace returns, these yarns will also be returning to civilian use. And as a result of war-gained knowledge and experience, they will be even finer than before.

ESTABLISHED 1883

Aberfoyle DURENE

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Belmont, North Carolina
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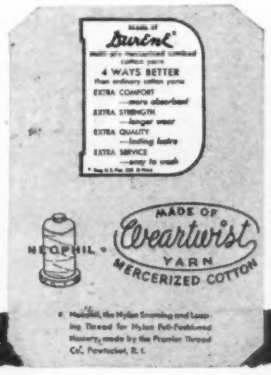
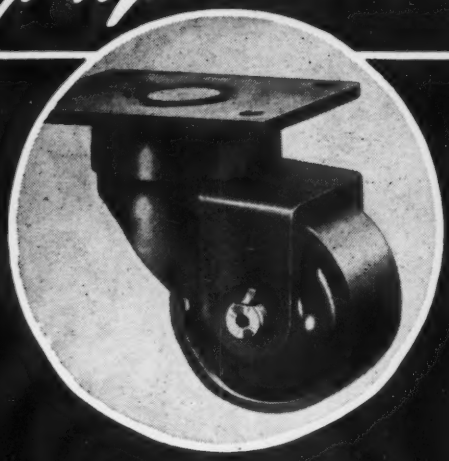


Step Up Production



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Frank Nagle Retires

(*Continued from page 101*)

in business. Customers trust a true friend and listen receptively to his sales story. I recall how impressed I was when calling on one of TEXTILE WORLD's customers in Rhode Island some years ago to hear that gentleman say, in a tone of both friendship and admiration, "One of the privileges of my life has been knowing Frank Nagle!"

MANY HONORS. Friends served not only to make his business life pleasant and profitable but also to elevate him to extra-curricular posts of honor. They made him commander of the Massachusetts Commandery of the Loyal Legion—a logical distinction, since his father was General James Nagle, of Antietam fame. Friends also made him commander of Boston's famous Ancient & Honorable Artillery Company, the oldest military organization in the Western Hemisphere. They raised him to grand commander of Knights Templars of Massachusetts and Rhode Island, and he is now the oldest living New Englander to have held that title.

They kept him a trustee of the Aleppo Shrine for 28 years. They elected him alderman of the city of Newton, Mass., where he has resided as a prominent and loyal citizen for 53 years. And they made him president of The Massachusetts Charitable Mechanics Association, the organization which was founded many years ago to help young men get a start in life and which had Paul Revere as its first president.

It is the latter association which operates that well-known Boston landmark called Mechanics Hall, where the old New England textile shows were held; and the captain was instrumental in establishing those shows. He also helped to found the Knitting Arts Exhibition, which was held annually so many years in Philadelphia and which is destined to be revived at Atlantic City, N. J., next year. Indeed, he has been active in various textile-industry affairs from the time he was clerk of the committee which established Philadelphia Textile School—now the Philadelphia Textile Institute—in 1884.

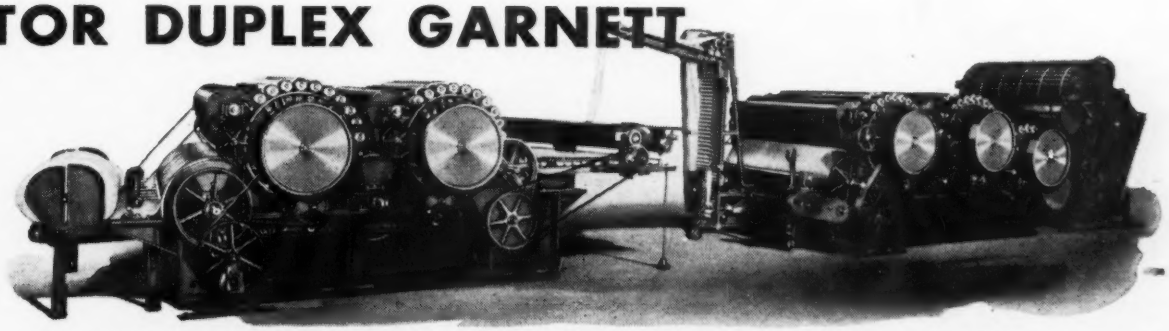
His interests have always been industry wide, as those who read his discourse on "Early Southern Industry," in the January, 1944, TEXTILE WORLD will recall.

BUSINESS CAREER. Captain Nagle's older brother, James Nagle, was one of the founders of the *Textile Record* with which Frank began his business

We don't sell GARNETTS . . .
We sell SOLUTIONS TO TEXTILE MILL PROBLEMS . . .

The finest garnett that it is possible to build would not be very helpful to you—if it did not SUIT YOUR INDIVIDUAL PRODUCT OR PLANT REQUIREMENTS. *That is why Proctor Textile Engineers are more concerned with solving your textile processing problem* than about selling this machine or that. If you have a garnetting problem, let us consider your needs and recommend the type of garnett best suited. Proctor engineers have developed highly efficient garnetting equipment for use in handling wool washes of all kinds, as well as rayons, cottons and a wide variety of other fibers. The two machines illustrated are simply indicative of this general classification of Proctor equipment.

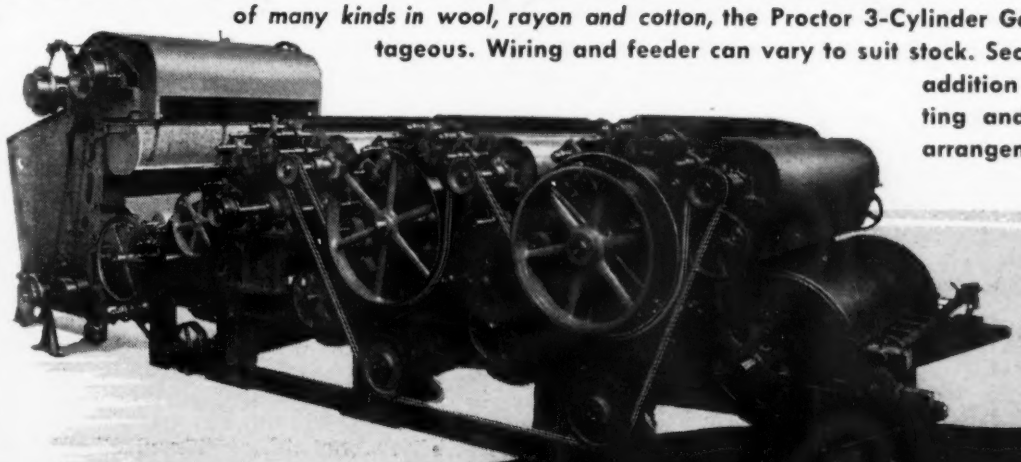
PROCTOR DUPLEX GARNETT



The Proctor Duplex Garnett (two garnetts with an intermediate feed) is ideal for opening of *hard twist worsted threads.* The intermediate feed principle crosses the fibers for the finisher so that more threads will be opened. Not only are fibers opened much better than is usually possible, but better blending is obtained and production levels are kept high.

PROCTOR 3-CYLINDER GARNETT

***For medium twist yarns and waste of many kinds in wool, rayon and cotton,* the Proctor 3-Cylinder Garnett is extremely advantageous. Wiring and feeder can vary to suit stock. Sectional construction permits addition of extra sections or splitting and converting to a duplex arrangement.**



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career 65 years ago. Frank early developed a talent for selling advertising space and soon became the chief salesman at the headquarters in Philadelphia. Later he acquired a financial interest in the publication, which was by that time under the editorial direction of Charles Heber Clark, and in 1892 went to Boston to open an office and develop New England business.

In Boston, he first met another great publisher, Henry G. Lord, founder in 1888 of the magazine TEXTILE WORLD. These two men, in 1903, established the firm of Lord & Nagle, merging their two publications under the title *Textile World Record*, soon afterward shortened to TEXTILE WORLD.

The Lord and Nagle partnership was a famous team. The men worked together in perfect harmony, each assuming the particular duties for which he was best fitted; and after 42 years of close association as partners and fellow executives, they are still the same good friends.

Then, in 1915, came another merger, this time with *Textile Manufacturers Journal*, to form *Textile World Journal*, published weekly. Shortly again, the old name of TEXTILE WORLD was resumed.

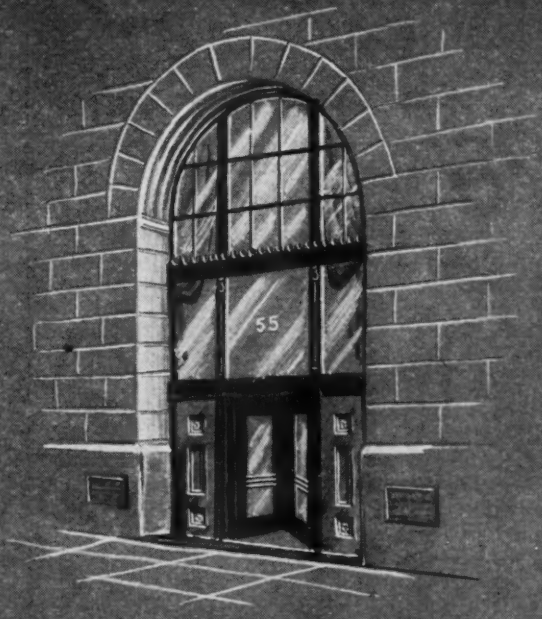
In 1928 an invitation to join the great McGraw-Hill group of business publications was received and accepted. Henry Lord is still active as vice president of McGraw-Hill, with his office in "the big green tower" in New York.

Several other textile papers have been absorbed through the years to produce the magazine which you now have before you. These include *Industrial Record* (founded in 1868), *Manufacturers Review and Industrial Record*, *Posselt's Textile Journal*, *Textiles*, and *Textile Advance News*.

A PIONEER. It is an unusual business experience—65 years of satisfactory accomplishment with one continuing activity. In the early days, trade papers were pioneer ventures. It is men like Frank Nagle, says Mr. Lord, who have helped to build business publications to their present important position in the world's economy.

A complete biography of the captain cannot be written now. It would be interesting to discuss some of the experiences of his relatively early youth, when, for example, he saw active military service in Pennsylvania mining riots. But there will be much more to the story, for it is evident that Frank Nagle will remain active in one way or another—even if not in textile publishing or other business—for many more years to come.

Yes, he is still relatively a youth at



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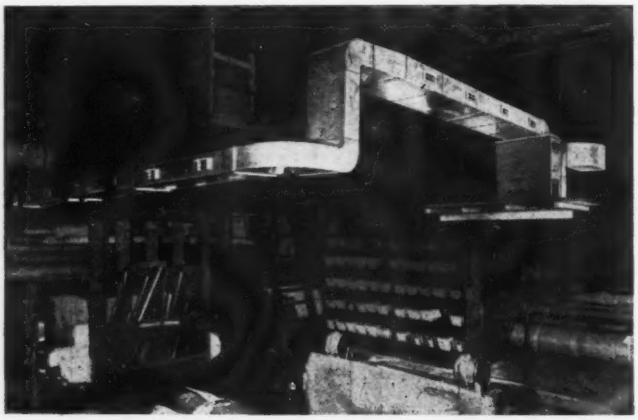
"Sorry we didn't put it in long ago".

"Loom fixer just sits here reading a newspaper".

"I appreciate the quick startings on Mondays and after holidays".

"Employees are not affected in any way by summer heat".

"No ends down. Waste baskets are empty on Mondays after we start up".



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85 (his age reached on July 25 of this year), and I think you will agree that he has earned the right to enter the pleasantest period of his lifetime, free from business cares and with ample time to enjoy the full company of Mrs. Nagle, a delightful lady (also of Pennsylvania-Dutch extraction) who is in every way fitted to be the companion of such a genial man. He rightfully claims that his marriage certificate was the most valuable contract he ever signed.

In his retirement, however, which begins on November 1, we may wish that he will find the time and also the inclination to write his memoirs. The volume would cover his interesting recollections of the early days of the textile-machine business, when he knew the fathers and the grandfathers and even the great grandfathers of some of the executives now active. I guarantee that he was a friend of all of them.

Gas-Fading of Acetate

(*Continued from page 133*)

machine discourage the dyer from dyeing all-acetate fabrics or blends on such units.

The stabilized leuco-esters of the vat dyes can easily be applied to acetate fibers. They are padded on in an acid bath, followed by the usual development with nitrate of soda and sulphuric acid. Their application is usually confined to light and medium shades. In these, they offer good fastness, not only to gas-fading, but to light and washing as well.

ACID COLORS. Selected acid dyes offer another method of obtaining excellent resistance to gas-fading, along with good all-around fastness. If certain acid colors are dissolved in a solution containing an alcohol swelling agent for the cellulose acetate and subsequently padded on acetate fabrics under controlled condition, the acid colors are fixed in the fiber on removal of the swelling agent and solvent medium. The swelling of the fiber permits the acid colors to penetrate into the fiber structure. Zinc thiocyanate and formic acid are also used as swelling agents. Subsequent washing or soaping removes excess color and returns the fiber to its normal physical condition.

In the last several years, there have been developed several new dyeing methods, based on somewhat different chemical and physical principles than those used previously. These methods, designed mainly for the more efficient application of vat colors to all-cotton

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Here at Cheney Brothers, we are on the brink of a civilian supply job as great as the military supply job we performed during the war.

And we are ready for it. The Cheney Mills have been streamlined for high speed production. New methods and techniques developed during the war, new buildings, new machinery have been added.

No one fiber is limiting our horizons here at Cheney Brothers. Long experience and aggressive research makes it possible for us to utilize many fibers and many combinations of fibers to produce remarkable new textiles worthy of the Cheney tradition. We are making just as many of them—just as fast—as we can, and trying to distribute them equitably among all our customers.

In spite of yarn shortages, we are making every effort to accelerate the swing to full peacetime production, and better supply for all. Meantime, there's one effort all of us should make to promote a better peacetime economy—that is to support vigorously the United States Victory Loan, and buy Victory Bonds.

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fabrics, require special equipment. Such equipment, if designed to operate with a minimum of tension, might well lend itself to the dyeing of acetate fabrics.

The problem of gas-fading became important soon after cellulose acetate came into general use. Dyers of this fiber had goods returned to them, accompanied by complaints that the colors used were not fast, or the shipments were off-shade. The dyer, in many cases, found the returned sample radically different in shade from what he had dyed; and to further add confusion, on checking his patches, taken from the lot when dyed, he often found them changed also. Blues turned to pinks, reds became oranges, and other shades went off-cast, apparently for no rhyme or reason.

SOURCE OF TROUBLE. As these troubles cropped up, investigations followed. As one lead, the shade changes seemed to occur most frequently in the larger centers of population. Following up this angle, it was discovered that the presence of gases formed from the combustion of coal, natural, and artificial gases were prime causes. Investigating further, researchers developed the fact that the oxides of nitrogen which are decomposition products from the burning of the previously mentioned fuels were apparently the source of the trouble.

Once the trouble was fixed, it became desirable that a method or test be developed so that the industry could evaluate both individual dyes and shade combinations for their resistance to gas-fading.

TEST METHOD. The American Association of Textile Chemists & Colorists, always active in the development of test methods for the textile industry, appointed a committee to work on this program. This committee started to work in 1939 and developed a test for evaluating atmospheric fading of dyed acetate rayon. This test was first published in the yearbook of the association. The present test appears, with additions and improvements, in the 1944 yearbook of the association, pages 247-250. It is entitled "Fastness to Atmospheric Gases of Dyes on Cellulose Acetate Rayon" (Tentative Method).

Details of the present test follow in abbreviated form:

Four specimens shall be cut from the fabric to be tested. One specimen shall be washed in a soap solution (containing 5 g. of 88% neutral soda soap per liter of water of approximately zero hardness) for 15 minutes at 100° F., rinsed in warm water, and allowed to dry in the air. One speci-

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men shall be immersed in cold Stoddard solvent for 15 minutes, squeezed, and allowed to dry in the air. One specimen shall be immersed in cold perchlorethylene for 15 minutes, squeezed, and allowed to dry in the air. The fourth specimen shall be retained in its original condition.

The treatment in the soap solution before testing is intended to show whether the fabric has been treated with an inhibitor to provide protection against gas fading. All the inhibitors at present available are soluble in water and are therefore removed by the soap solution. On the other hand, they are not soluble in the ordinary dry-cleaning solvents, and fabrics treated with suitable inhibitors should withstand several dry cleanings without losing their resistance to gas fading (if the dry cleaning operation does not include spotting or sponging with water). The inhibitors lose their efficiency if the fabrics come into frequent contact with perspiration. If desired, either carbon tetrachloride or trichlorethylene may be substituted for perchlorethylene.

Any equipment in which the test samples can be exposed to air which has passed through the flame of a lighted gas burner will serve satisfactorily.

A typical installation is shown in Figs. 1 and 2. The gas chamber is made of galvanized iron, with a glass window in the door, and a thermometer inserted through a hole in the ceiling. The gases, from a lighted Meker burner (Fig. 1.), enter the chamber at the right side, are deflected by baffle plates AA, and are kept in circulation by means of a fan driven by a small electric motor. In Fig. 2, the samples to be tested are shown suspended from metal rods.

Samples of the four specimens, each measuring at least one inch square, shall be suspended freely in the chamber together with three "control samples" consisting of standard acetate rayon dyeings of different degrees of sensitivity to gas fumes. The gas burner shall be lighted, and the flame adjusted so that the temperature in the chamber does not exceed 140° F. The samples shall remain in the chamber until control sample No. 1 shows a complete change of shade corresponding with that of a "standard of fading." The samples shall then be removed from the chamber and immediately compared with the respective unexposed portions of the specimens.

A sample which, when compared with the unexposed portion, shows an alteration of shade no greater than "control sample No. 3" shall be considered to have excellent resistance to atmospheric gases. A sample which

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Judging by the experience of the firms factored by us, we are justified in saying that our service can help you do a bigger, better business. We keep your working capital liquid, and thus enable you to take care of expanding sales. In addition, on all your business that is factored, the profits are fully protected against credit losses—we assume the risks. Why not write us today? There will be no obligation on your part.

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How would you print this pattern

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The Glasgo Finishing Co. obtained uniformity of shade, smoothness of print, and avoided danger of cracking the fabric with Aridye* pigment colors.

Knowing that conventional blotch printing—with dyes and thickeners that form brittle films—might break the filaments, Glasgo decided to dye the ground with a diazotized and developed gray, and overprint.

The formula for the green was three parts Aridye Green FJB and two parts Aridye Yellow FYG, cut 1:3 with regular Aridye Clear. Aniline Black was used for the peg, with a starch and gum thickener—the white was obtained with Aridye White F21, cut 1:5 with a Clear containing 12 oz. per gallon of sulfoxylate. After printing, the fabric was dried, padded with peroxide, steam aged and washed.

Result—a sharply defined, unmottled print—with exceptional uniformity of shade and absence of cracking that greatly reduced seconds. Fastness to washing, drycleaning, and perspiration met or exceeded all requirements.

This pattern, of which thousands of yards were run commercially, is typical of many that can be printed with Aridye colors, although difficult to produce by conventional methods. For day-in-and-day-out dyeing and printing jobs, too, Aridye colors offer you definite advantages.

An Aridye technical service man will be glad to discuss where and how you can benefit from the use of Aridye pigment colors, and advise which are available today. Write to Aridye Corporation—*pioneers in pigment colors for textiles*—Fair Lawn, New Jersey.

*Reg. U. S. Pat. Off.

CHECK THESE 8 ADVANTAGES

Sharpness of Mark • Exceptional Fastness to Sunlight
Uniformity of Shade • Fastness to Washing • Bright Colors
Economy • Ease of Application • No Impairment of Hand

Aridye *Pigment colors*

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AMONG the hundreds of large and small organizations with which it has been our pleasure to work over past years in connection with the establishment of new plants are:

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and many others. We believe that they have not regretted their decision to locate in Alabama.

Your inquiry, addressed to our Industrial Development Division, Birmingham, about industrial and commercial advantages resulting from locating in Alabama, will be treated confidentially.

Thos W. Martin

President
ALABAMA POWER COMPANY

shows an alteration of shade greater than control sample No. 3 but no greater than control sample No. 2 shall be considered to have good fastness to atmospheric gases. A sample which shows as much alteration of shade as control sample No. 1 must be regarded as having poor fastness to atmospheric gases.

The control samples shall be three in number, dyed on any construction of acetate rayon, properly scoured and prepared. Colors and concentrations are as follows:

No. 1. 1.0% Celanthrene Brilliant Blue FFS
No. 2. 0.5% Eastone Blue BB
No. 3. 0.8% Setacyl Direct Blue GD

This test, briefly described, has never been set up as a permanent test, since the Research Committee of the American Association of Textile Chemists & Colorists has felt that it is subject to addition and improvement. We understand that such revisions are under way, so that the test will be further improved and amplified in the forthcoming yearbook of the association.

Aralac Fibers Aid Blending

(Continued from page 137)

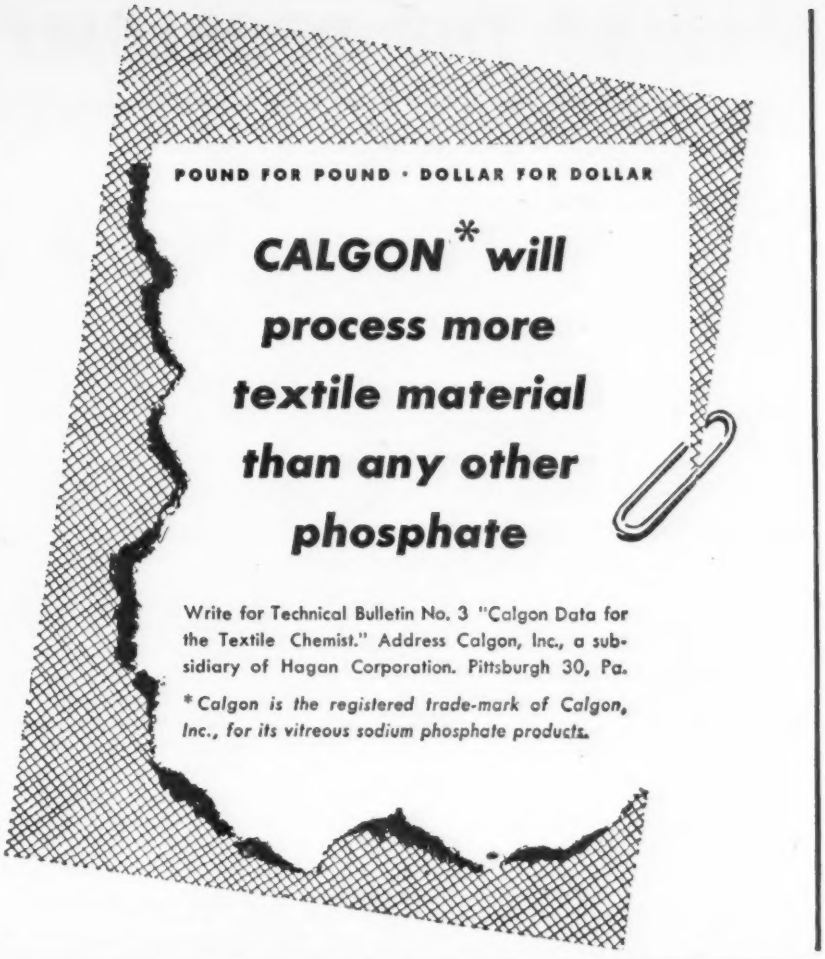
II—One-Process Picker. If a mill is set up in the opening room to control mechanically the percentage of Aralac fed in conjunction with cotton to one-process pickers (and the cotton is clean enough at this stage for blending), a very good distribution of fibers through the picker will result.

If mechanical conditions do not permit blending in this manner, the "sandwich" method will accomplish the same results, but at somewhat higher cost. This method consists of spreading a given weight of cotton on the floor of a mixing room or bin and covering it with a weight of Aralac proportional to the blend desired. The "sandwich" is formed when another layer of cotton, followed by another layer of Aralac, is added. This mix is then fed to the picker by cutting down through the layers of the two fibers.

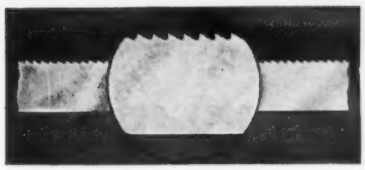
III—Drawing Frame. Blending is done by some mills at the breaker drawing frame. The ratio of cotton and Aralac desired is accomplished by determining the number of card slivers of each to creel into the frame.

This method is satisfactory unless the end use of the yarn or fabric requires even cross-sectional distribution of fibers. Since the dyeing and finishing properties of cotton and Aralac are not identical, the finished products must be watched closely for signs of faulty blending.

TINTING THE FIBERS. It is sometimes


POUND FOR POUND • DOLLAR FOR DOLLAR
CALGON* will process more textile material than any other phosphate
Write for Technical Bulletin No. 3 "Calgon Data for the Textile Chemist." Address Calgon, Inc., a subsidiary of Hagan Corporation. Pittsburgh 30, Pa.
*Calgon is the registered trade-mark of Calgon, Inc., for its vitreous sodium phosphate products.

To Clean and Reseat Slots in Sinker and Divider Heads



Thomas & Skinner Slot Cutter

No need to send sinker and divider heads back to factory when you have Thomas & Skinner Slot Cutters. This simple and valuable tool enables you to clean out and reseat slots right *in your own mill.* And you can keep a machine in operation—with only the head you are working on out of production for a few hours.

Thomas & Skinner Slot Cutters are made from high grade tool steel, tempered and ground to exact gauge of the sinker. Comes in a leather carrying case. Every fixer should carry one. It is necessary to send sample sinker when ordering slot cutter.

Other Products

Other quality products which we manufacture for full-fashioned hosiery mills include Jacks, Jack Axles, Course Markers, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines.

Reconditioning Service

We restore worn cams, gears, rollers, and many other textile machine parts to their original size and shape. Satisfaction guaranteed.

Thomas & Skinner Steel Products Co.
1119 EAST 23rd STREET • INDIANAPOLIS 5, INDIANA

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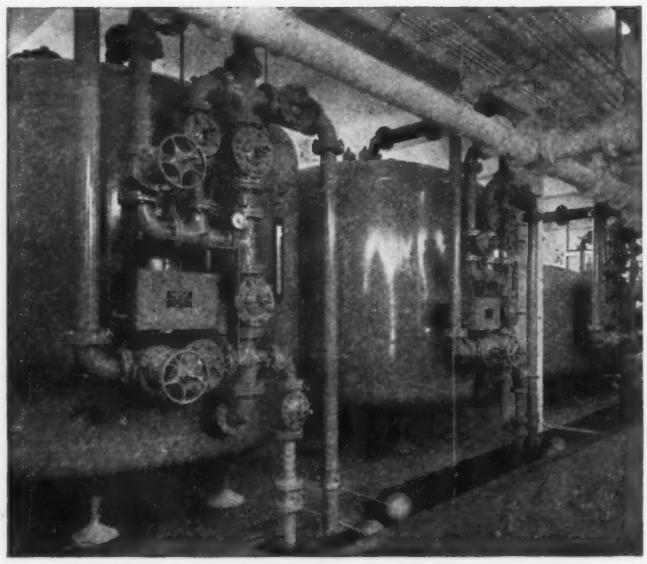
Boiler Inefficiency

Heat Loss

Processing Troubles



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necessary to use a positive method of identifying the fibers in the blend. This is usually done by applying a tint to one of the fibers, and it is necessary to select a dye which will be satisfactory for the particular combination of fibers. The tint may be sprayed on the lap at the picker. No tint should be used that has not been thoroughly tested under conditions prevailing in the mill.

The Kirschner beater is generally used for processing Aralac, and the speeds range from 600 to 700 r.p.m. in order to beat the fiber as easily as possible. For a 2½-in. feed roll, the setting should be about ⅜ in. from the face of the roll; and the weight on the calender roll should be reduced in order to minimize the chances of crushing the fibers.

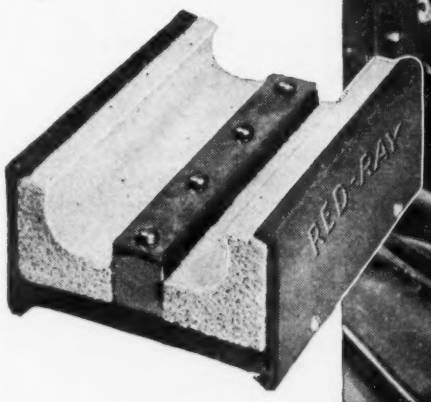
Controlled humidification in the picker room is desirable in order to keep weights as near standard as possible and to make the fibers flexible. A relative humidity of about 55% is recommended. If a spraying apparatus is available at the picker hopper, moisture or an emulsion should be applied to suit processing and atmospheric conditions and the particular blend being run.

The fan speeds on the picker should be increased and the grid bars closed to reduce fiber loss. The drafts should be set so that more of the fiber is drawn to the top cage in order to reduce the possibility of split laps. Another method used by mills to reduce split laps is to run a few ends of roving between layers of the finisher lap to act as a binder.

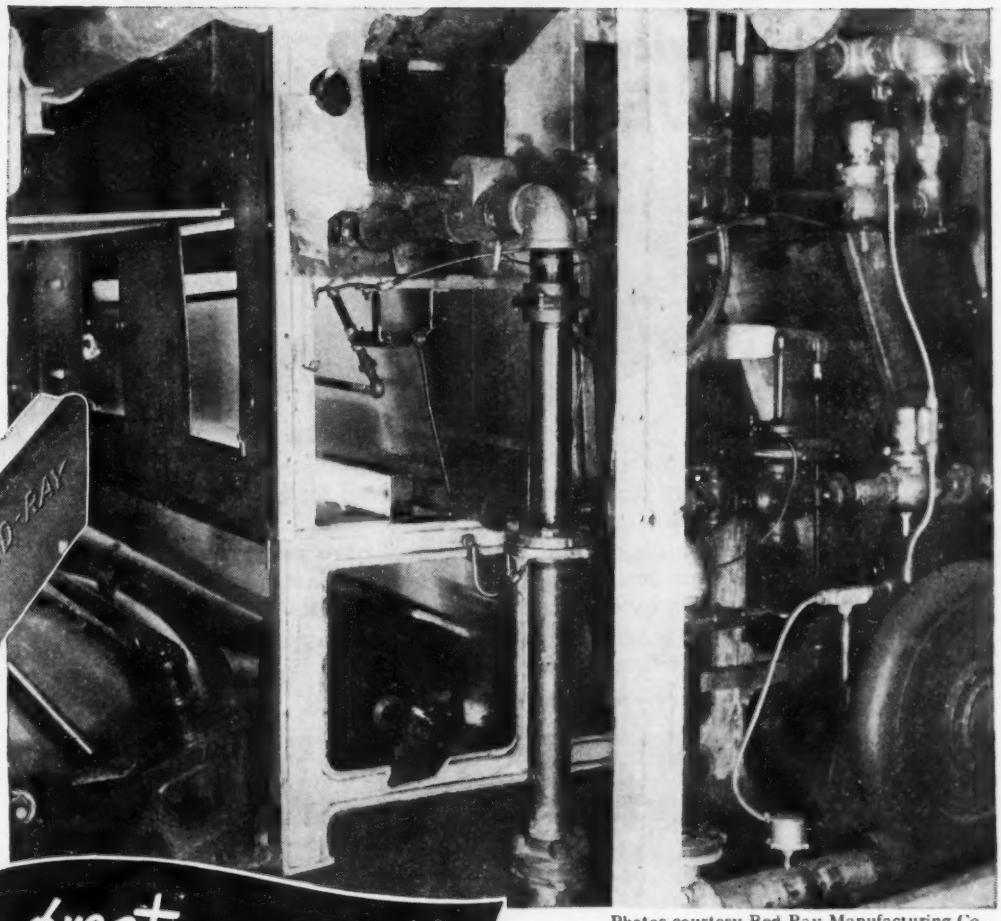
In some blends, fiber resilience may cause thick or soft places in the lap, particularly if the fiber is dry. Under such conditions, if picker-room humidity is not controllable, it may be necessary to shorten the length of the lap. Lap trouble can be reduced by running the laps in the card room relatively soon after they have been made. Laps which are off weight should not be re-run to the extent that cotton laps are, for the extra beating may be more objectionable than the small weight variation.

CARDING AND SPINNING. All machine settings should be made on the basis of the length of the fiber in the blend, as in cotton processing. A 14-oz. lap and a 50- to 55-gr. sliver have been found advisable in running most blends of Aralac and cotton. The card-flat speed can be reduced to 1 to 2 in. per minute. The waste made on the card can be re-run with regular stock, if it is handled regularly and is not too short-fibered. A lickerin speed of about 250 r.p.m. is generally used. A relative humidity of about 55% should be maintained around the cards,

Focussed GAS HEAT from a Ceramic cell



brings to textile operations



Photos courtesy Red-Ray Manufacturing Co., New York, N. Y.

greater speed

accuracy of control

improved production

An advance in Gas Equipment of recent years is the ceramic cell Gas burner which brings to textile heat processing many advantageous features. Gas, the modern industrial fuel, burning in the ceramic bowl, develops an intense heat, free from torching, which is focussed directly at the material being processed.

Here is considerable economy in the use of heat, putting it to work at unusually high efficiency. Automatic control of this Gas equipment is unsurpassed—quickly bringing the burners to the required temperature and maintaining them there. Cleanliness, long life of the equipment with little maintenance, minimizing of rejects or seconds in production are typical results with this type of Gas equipment.

If you plan to expand your textile plant facilities or remodel them, be sure to consult the Industrial Gas Engineer of your local Gas Company. He has a store of valuable data which is at your disposal.

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INDUSTRIAL AND COMMERCIAL GAS SECTION
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JENKINS METAL CORE

CYLINDER BRUSHES with nylon bristle have revised upward all records of durability and efficiency in modern textile weaving and printing plants.

The cores of aluminum or cold drawn steel give permanent alignment and freedom from sagging or splitting. Cores can be refilled with new bristle by our patented winding method.

The nylon Bristle is moisture resistant, and is easy to clean after use. Renewable when worn.

Ask for catalog with full descriptions

M. W. JENKINS' SONS, INC.
CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

We manufacture furnisher brushes; brushes for shears and brushing machines; also flock brushes, and laying brushes for cotton, woolen and worsted mills. With nylon or natural bristles.

STANSOMINE:

For all cotton fabrics.

Increases the speed and efficiency of boiling off and scouring operations. Improves the bleach. Produces a softer finish. Effectively emulsifies oils, starches, waxes. Ensures uniformly brilliant dyeing.

Our laboratory and chemists are at your service to render information and assistance in solving your problems.

Samples and quotations gladly furnished upon request.

Standard Soap Co. of Camden

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CAMDEN, N. J.

G. TANGUAY
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and about 60% around drawing, roving, and spinning.

Lower speeds and twist multipliers are recommended for Aralac blends on all drafting frames. The twist standard will vary with the length and diameter of the fiber. Twist multipliers slightly above 3.75 have been found satisfactory. A method for obtaining the twist multiplier is to figure the Aralac on a rayon basis, using slightly more twist for Aralac than for rayon.

Chadbourn Converts to Nylon

(*Continued from page 115*)

use in the mill calculation of constructions because of the different tensions and settings on the machines. However, these percentages may be developed by proper testing routine; and the relationship of courses per inch in the gray and in the preboarded hose can be determined.

DYEING. John Dulin, head dyer at the Larkwood mill, states that dyeing procedures will differ for the nylon hose. With the split-bath method on a rotary-type dyeing machine, Dulin uses acetate dyes and a temperature of 190° F. This temperature can be varied, but in no case should come within 50° F. of the preboarding temperature, which generally will be found around 250° F. Scouring, dyeing, rinsing, and finishing are done in the rotary machine. These operations are followed by extracting as a separate process.

Boarding temperatures are usually held at 230° F., which is also below preboarding. After boarding comes additional inspection and pairing during which the foremost consideration is handling the hose properly. Before boxing, the nylons receive a trade-mark that distinguishes them from rayons.

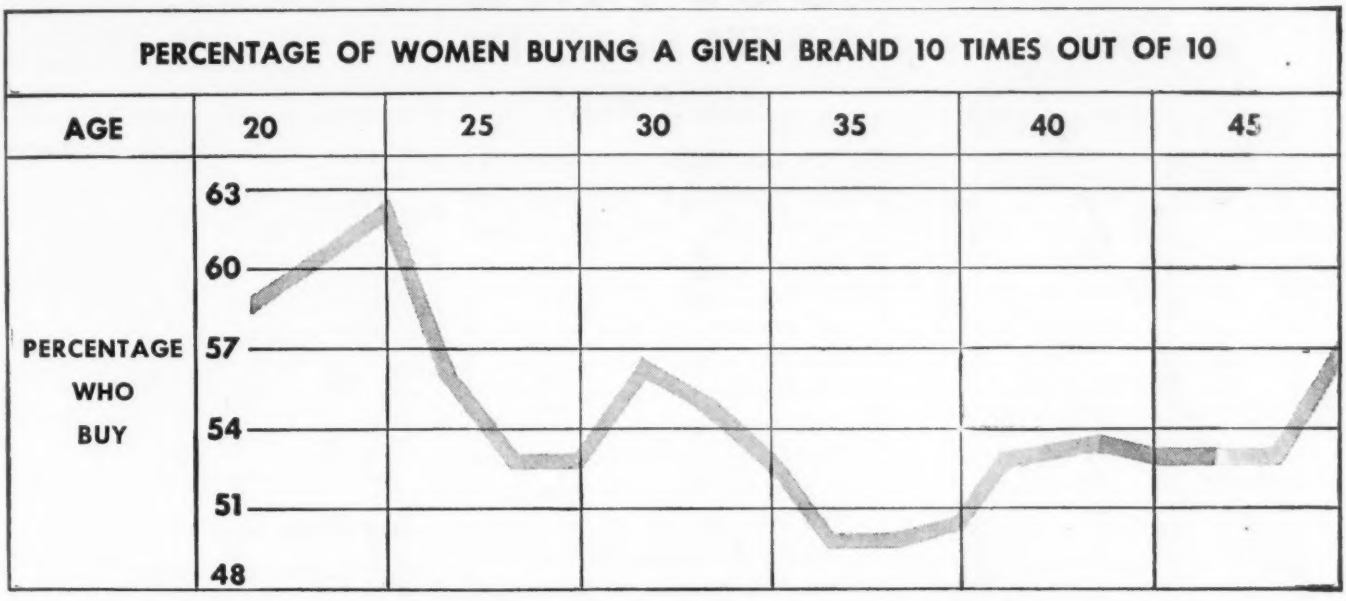
Cleaning Motors

(*Continued from page 117*)

cleaning with solvent or water. When water has been used for cleaning, it is preferable to dry the windings in an oven.

Regardless of the heating method used, it is recommended usually to limit the first bake to a maximum of 75° C. (167° F.) on the windings, and to raise the temperature slowly to 110° C. (230° F.) maximum for Class A windings and to 130° C. (266° F.) maximum for Class B windings. Frequent insulation-resistance readings should be made and curves plotted for future reference in order to standardize bakes for certain classes and types of machines. The drying time neces-

What Canned Soup proves about Women



WOMEN BETWEEN 20 AND 30 ARE MOST SUSCEPTIBLE TO BRAND NAMES

At 22 years old, 61% of thousands of women who were interviewed in a Fawcett survey said they bought the same brand of canned soup every time they bought *any* canned soup.

Nearly 60% of the 21-year-old women consistently bought the same brand of coffee.

This Fawcett survey among women from 16 to 50 studied women's purchases of: gelatines, toilet soaps, dentifrices, flake soaps, face powders, sanitary napkins, shampoos, deodorants, lipsticks, cold or all-purpose face creams — all of them "convenience items."

Here is what matters to you: Women are at the peak of their *brand susceptibility* in the early twenties. That's when brand names make the big first impression on them. That's when women are most loyal to brand names.

That's when you should advertise *your* brands to these young women. Reach them in these first-impressionable years. Establish preferences for *your* brands, so that these women will keep up — even after they're 30, without *any* dip in that chart — the brand loyalties you've founded.

Remember:

WOMEN OF 20 TO 30 have more buying years ahead;

WOMEN OF 20 TO 30 are experimenting with new brands, and picking *their* favorites;

WOMEN OF 20 TO 30 have used certain brands in their family homes, and are more likely to carry this more recent home influence over into their own adult buying;

WOMEN OF 20 TO 30 have already been using certain brands for years — a large percentage (as the interviews showed) for ten solid years and more. Brand loyalty *can* be built and maintained surprisingly early.

You can reach more women of 20 to 30 — married, homemakers, mothers — *with your advertising dollar* in the Fawcett Women's Group than in any other major magazine in existence. More than 3,000,000 women every month go to their newsstands and pick out these magazines that entertain and help them.

Reach women of 20 to 30 in the

FAWCETT WOMEN'S GROUP

TRUE CONFESSIONS

MOTION PICTURE

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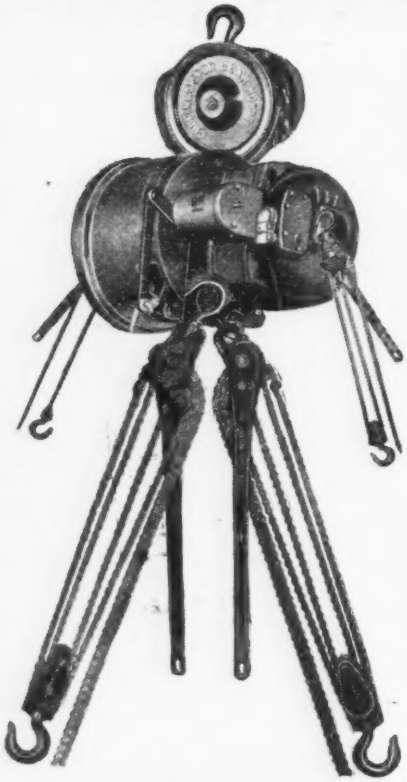

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LIFTING and PULLING EQUIPMENT

Will soon again be available for your production, construction and maintenance jobs. After almost four years of day and night production for the Armed Forces we are now in position to accept and schedule your orders. We are proud of the production record we have made and of the important part COFFING products played in helping to restore Peace on Earth. Our standard line of hoists were used by our fighting men so there is no reconversion period for us.

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COFFING HOIST COMPANY
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Sterling Ring Travelers

SUGGESTION

When breaking in new rings, call our Service Engineer.

There are many different ideas on this subject, but he can assist you through suggestions as to the correct circle and style to use.

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STERLING RING TRAVELER CO.
FALL RIVER, MASS.

sary is controlled by the size of the machine and the heating methods used, as well as the condition of the windings.

CLEANING CORES. Cores can be further cleaned after the coils have been removed by use of a blast of fine sand, applied under pressure. Slots can be cleaned in this manner preparatory to rewinding. However, the operation has to be controlled carefully in order not to burr laminations or remove steel from the punchings.

The cleaning is carried out by a blast of sand directed through a hand gun at 75 to 85 lb. pressure (at the nozzle). Cores to be cleaned are placed on a special revolving platform which contains hoppers for the sand. By means of the hand gun the blast in the slots is directed parallel to the length of the core. Such a method thoroughly cleans all recesses.

Soy-Bean Size

(*Continued from page 127*)

when using this new size is that slasher-cylinder temperatures need not be watched so closely as with other types of size. Tests have shown that it is virtually impossible to bake the size or overheat it within the normal range of temperature generally found on slashers. This means that when slowing down slashers to repair ends or to put in a lease, it is not necessary to cut off the heat entirely, although the steam should be cut down if the slasher is not equipped with a temperature control which will keep the heat from becoming excessive. In other words, it has been found that there is little or no danger of causing the size to deteriorate or become insoluble, although the heat should never be allowed to get so high as to effect the yarn.

Boil-off tests have shown that even on warps which have been overheated, the size is removed more quickly than is normally the case with gelatin or casein sizes. This ease of removal is one of the advantages recommending the material. One of the other advantages is the extreme uniformity of product which has been observed. To illustrate, it is claimed that blending, mixing, or adjusting is not necessary to obtain a uniform product.

Although mention has been made that soy-bean protein size can be obtained as a one-piece product, for certain constructions it may be desirable to add additional softener or oil. In Table I can be seen recommended formulas for using this product, with the softener listed as optional. These formulas are merely bases from which adjustments to suit particular weave

A Century's Progress in Circular Knitting

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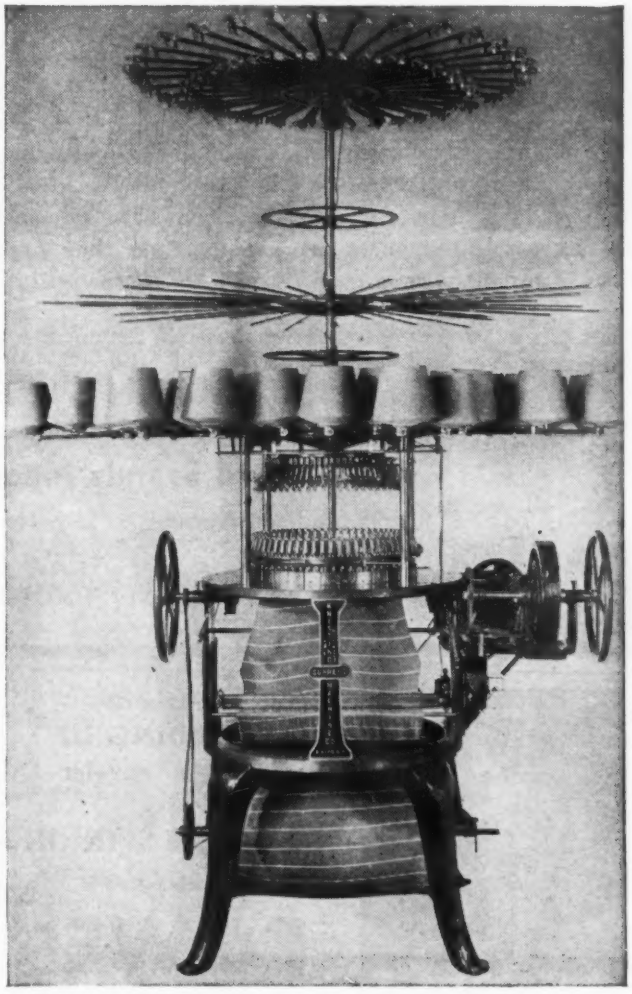
The "ROTARY KNITTING LOOM" — invented by Erasmus French, of Springfield, Mass. in 1845, was said to "knit one sock per hour."

Perfected by development of the latch needle, the circular machine went through many stages of improvement over a long period of time, until the modern machine was evolved.

1940

(Type M.J.O.—20"—64 Feed)



Type MJO-20"-64 Feed SUPREME Machine

Four Star recognition in War work is the record of the very same men who designed and formerly produced the outstanding circular machines in the field—equipment with performance records that have enabled manufacturers to produce the large amounts of fabrics required for both the Armed Forces and Civilian uses. These machines are SUPREME in their field of operations, past, present—

And—For POST-War

SUPREME has developed a machine unlike any circular machine ever produced in this century of progress.

Our 30 years of experience, plus the knowledge gained from the highly specialized technical work we are doing for the Armed Forces, enabled us to design this SUPREME Post-war model.

When can you see it? When can you buy it? —depends to some extent on when the Armed Forces release us from our present obligations. We are accepting orders now and business placed will naturally take precedence when SUPREME POST-WAR MODELS are available.

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The Prime Favorite!

DIASTAFOR de-sizing agent is the prime favorite of the textile manufacturing industry. Why? Because DIASTAFOR always gives a superb performance that assures smooth, supple, flawless fabrics. DIASTAFOR eliminates all de-sizing problems . . . affords economy . . . assures perfect results every time.

If you are not now using **DIASTAFOR** be certain to try it. For this outstanding de-sizing agent is the ideal one for cottons, mixed goods and rayons. That's the concensus of chemists and mill-owners everywhere—and they *know*, because the majority have used DIASTAFOR for years!

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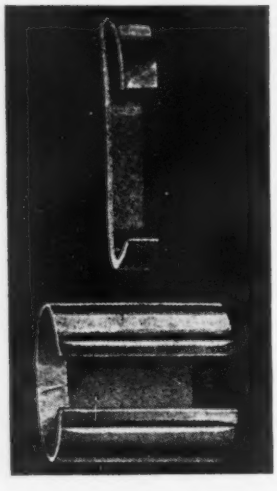
DIASTAFOR 37 YEARS OF SATISFACTORY RESULTS



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BEVEL EDGE

FOR SPINNING AND TWISTING
On cotton spinning the "Bevel-edge" greatly reduces the trouble.

The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silk — no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

● SOLD UNDER THESE TRADE NAMES.

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Eronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Traveler
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

PERFECT BALANCE Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. Note "bend Inward" at top of horn.

HEAT CONTROL for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers —for better performance.

U.S. RING TRAVELER CO
AMOS M. BOWEN
President and Treasurer
PROVIDENCE RHODE ISLAND

rooms or equipment conditions can be made. These formulas have been found to give about a 6% boil-off.

Table II shows the temperatures which have been found to be satisfactory for drying warp sized with protein material. Here again, the temperatures are merely recommended; they can be increased or reduced depending upon the yarn speeds at which the warps are run. The temperatures given are for the surfaces of the cylinders.

GOOD PENETRATION. For quite some time, one of the principal problems in slashing acetate yarn was penetration. Test runs and cross-sectional photomicrographs have shown that one of the principal advantages of a soy-bean protein size is its ability to penetrate acetate yarn.

When making film tests with this material, standards other than those normally employed for gelatin size must be used, particularly because of this factor of penetration. Since the material penetrates well, there is a minimum of stripping of the size and an absence of tacky feeling.

As can be assumed from the foregoing, the size does not tend to foam or gum; and it does not gel upon cooling, even when used in concentrations of one pound per gallon. Although soft water is preferred, it is not absolutely necessary.

This new slashing material, which comes from a source that is quite plentiful, is helping to alleviate the recurring shortages of other sizing materials, which shortages have caused acetate rayon weavers some concern from time to time.

Table I does not list size formulas for viscose-process yarns. Generally, between 20 and 25 lb. per 100 gal. is satisfactory. As a general thing, the slashing of viscose yarn presents no problem; certainly no such problem as does that acetate rayon.

Army-Navy Joint Buying

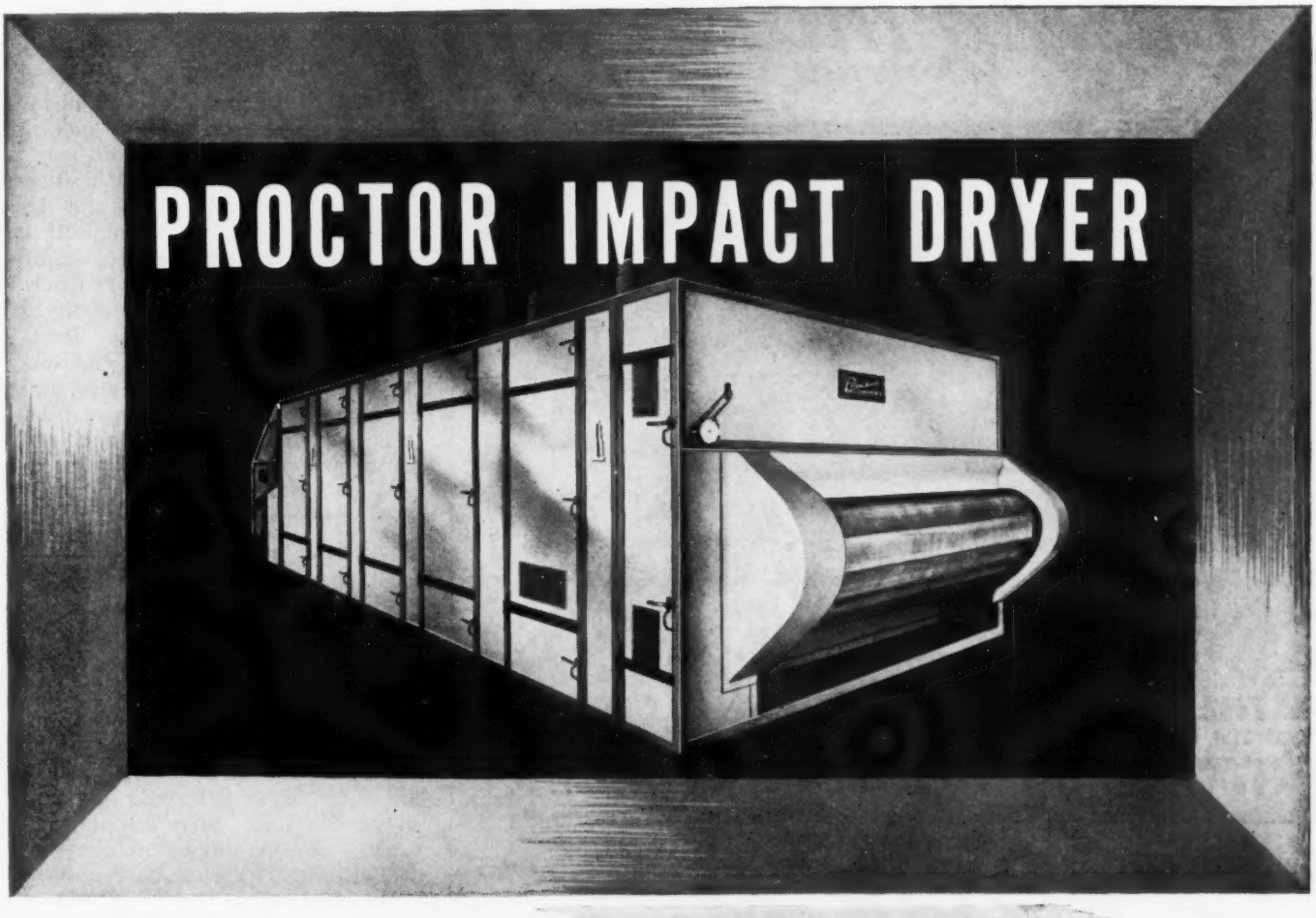
(*Continued from page 125*)

equipage, duck and webbing, women's garments, and knit goods.

The fact that Army and Navy purchasing officers were working side-by-side in the same building resulted in numerous efficiencies. For example, the Navy was in the process of replacing 500,000 O. D. blankets with the customary white shipboard type. The Army purchasing officer was immediately notified and was able to use these O. D. blankets to fill Army requirements.

At another time, a Navy contractor was threatened with an immediate plant shut-down due to his inability

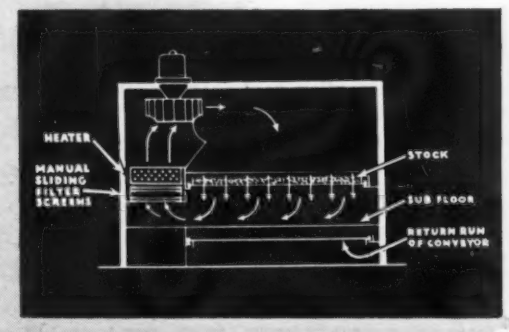
Recommended for Rayon Staple Drying



A recommendation based on FACTS!

It has been proven in the laboratory and by actual production records in textile mills, that the Proctor Impact Type Dryer is the ideal equipment for the drying of dyed or tinted rayon staple.

Here is why we feel perfectly free to make that statement. First, drying is uniform. Second, the capacity of this machine is greater than any type of dryer previously used for drying rayon staple and other fibrous materials. The principle of "impact drying" is the impingement of heated air at high velocity on the bed of material as it is conveyed through the drying chambers. This keeps the material in motion throughout the drying process and assures absolute uniform drying of each fiber—in the shortest possible time. This is not only important from a standpoint of uniformity, but the fact the fibers are exposed to heat for a considerably shorter period of time, means that these fibers remain more flexible and are better adapted fo further manufacturing processes. Write today for details. Learn how this machine can increase the efficiency in your plant.



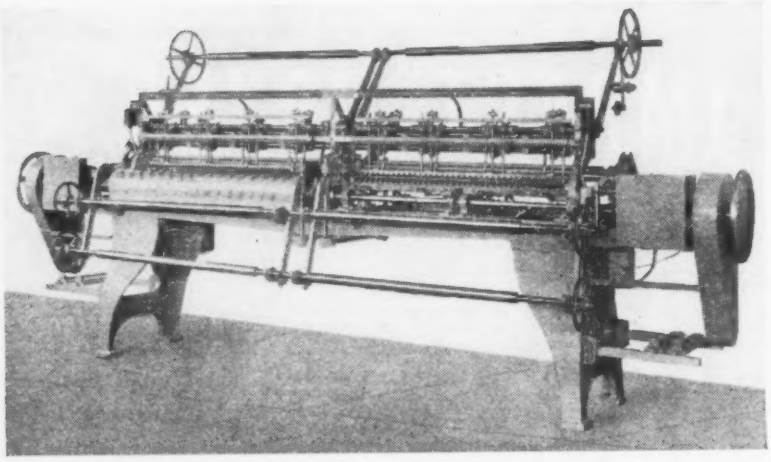
Cross section illustrates "impact drying". Note unique air circulation which contributes to uniform, speedy drying.

PROCTOR & SCHWARTZ • INC • PHILADELPHIA 20 • PA

"MULTI-NEEDLE"

Quilting Machines

PATENTED



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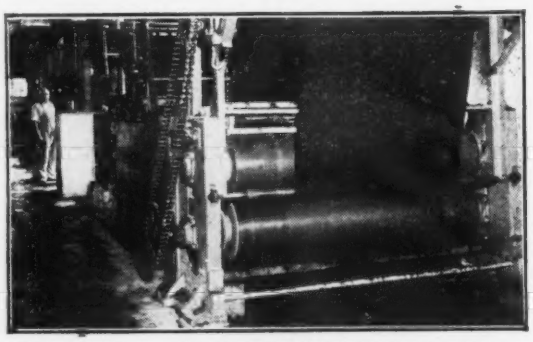

Installation in famous New England Mill showing Squeeze Rolls and Rubber Lined Soaking Tank in foreground and Dryer and Baker in Background

With a 12 pass 2 section horizontal dryer, this range will handle 10 oz. woolens at a minimum rate of 25 yds. per minute.

FEATURES INCLUDE:

1. A solid metal tank of extra large capacity with one piece vulcanized rubber lining, giving long life and eliminating leakage and repairs.
2. Three sets of squeeze rolls, making for greater acid penetration; last set is extra heavy for extraction; no vacuum slot used.
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RIGGS AND LOMBARD

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to obtain 25,000 yd. of herringbone twill. This was obtained from the Philadelphia Quartermaster Depot in time to prevent the shut-down. In September, the Army needed 7.2 oz. uniform twill. This was obtained from the Naval Clothing Depot in Brooklyn to the tune of 6,602,240 yd.

Studies have been made to modify specification requirements on many commodities so that one specification will exist for both the Army and the Navy. It was noted for example that many cotton garments are so similar in design and use that only relatively minor modifications were necessary to make specifications uniform. Items studied included drawers, shirts, jackets, trousers, pajamas, robes, caps, and dungarees. Similar studies have been made covering wool cloth, wool garments, and other items. Conferences have also been held to unify methods of procurement.

German Textiles

(*Continued from page 139*)

spinning frame which consisted of a galvanized iron or tin truck about 3 in. high under the creel board with a tube coming up and fitting in place where the under clearer roll would be normally held. This tube was tapered towards the end away from the connection of the trunk, and a very small hole was bored in the trunk so that when an end breaks down, the roving feeding through to the front roll was sucked into the trough, through the trunk, and into a box at the end of the frame. The fan required about 1 hp. A 30 to 40% reduction in ends down was claimed to result from this device. One 25,000-spindle German mill was fully equipped with this device, and the owner seemed to be well pleased with the results obtained.

TOW CUTTING. Another interesting machinery development at Denkendorf was an automatic tow-cutting machine, reputedly the best development in this field in that it makes an overlay or shingle effect of the cut staple so that if the machine is cutting 4-in. staple, which it does cut uniformly and continuously, each 4-in. segment overlays 3 in. of the previous cut. This stock is dropped on an apron and moved to a new type intersecting gill box and from the gill box into a coiler head and a can.

The type of roll covering used at Denkendorf was called "Mipolam," a synthetic vinyl chloride or polyvinyl chloride made by I. G. Farben at Troisdorf, near Cologne. This roll covering comes in hollow tubes and in any required diameter and various

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densities. It is slightly plastic, and the hardest density was used on drawing, the medium density on roving, and the softest covering on spinning. Usually the first roll on drawing and spinning was covered with leather over the Mipolam to reduce static. This roll covering cost about 50% more than leather, it is claimed, but lasts ten times as long. One roll covering would last about four years, or 16,000 operating hours.

Belts on the roving frames were made of polyvinyl alcohol. These belts were spliced by warming the ends of the belt in hot water and then putting them under a clamp for two or three hours. They supposedly had much better gripping power than leather and gave no trouble.

No overhead cleaning was seen either in Denkendorf or any other mills in Germany. The Germans used nothing but filling wind on their spinning frames, and the majority of machines had automatic variable-speed motors. The plant at Denkendorf had water-cooled spinning-frame motors with the circulating water going through a cooling tank located in the yard.

PROCESSING WOOL. In Germany, the woolen mills are all vertical plants. The larger ones employed between 800 and 1,000 workers, operating from 6,000 to 10,000 spindles and around 200 looms. Most of the worsted mills are horizontal plants, doing only combing or spinning, or having combing and spinning combined. There are very few plants where worsted spinning is combined with weaving. Some of these plants compare favorably in size with American worsted mills.

Probably the largest combing plant in the world was the wool scouring and combing plant in Bremen-Blumenthal. This plant had 40 scouring trains and 1,230 combs. One third of all the combing machines in Germany were concentrated in this one plant. In normal times 4,000 people were employed.

Prior to the war, Germany, in order to supply her industry, imported about 90% of the raw wool required. One of the best illustrations of how worsted plants were forced to change from wool to substitute fibers is shown by the records of the Bremer Wollkaemmerei. In 1938, this plant produced 70% wool top and noils and 30% rayon top and noils; whereas, in 1944, the wool percentage had dropped to 25%, the rayon increased to 47% and the flax and hemp output amounted to 28%.

WOOL SCOURING. All German mills used the soap-soda process; solvent extraction methods were not used. No

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special new machinery of importance was used, but grease recovery was very important.

Dyeing of military uniform cloth was done in the stock for the woolen yarns and in the top for the worsted yarns. The wool was dyed with vat colors, Helindon type, whereas in top dyeing chrome colors were used. The reason was that the dryers found it too difficult to apply the vat colors in customary top-dyeing machinery.

The reworked wool portion was dyed with chrome dyes, on account of the tanning effect produced through the chrome. Rayon staple fibers could be dyed either with vat or sulphur colors, or spun dyed. Towards the end of the war there was no more pure wool waste available; and as straight chrome dyes have no affinity towards the rayon staple fibers, the dyers had to use dyes which had affinity for both animal as well as cellulose fibers.

WORSTED SPINNING. The combing, drawing, and spinning of the rayon yarn was done on standard French worsted equipment. For combing, the only new machinery of special interest was a backwash dryer, built by Fleissner & Co. in Ash, Czechoslovakia. It is especially suitable for dyed rayon sliver, and its capacity was claimed to be arount 1,500 lb. per hr.

Because the rayon-staple fiber is so uniform in length, most spinners reduced the drawing operation to four passages for the single 33s worsted yarn. They made full use of the gills equipped with rubber aprons. The adoption of rubber intersecting frames seemed very valuable, providing an appreciable saving of labor and space and, therefore, decreasing the drawing costs. The Zellwolle Lehrspinnerei in Denkendorf developed a special process suitable for spinning of normal staple rayon which went even further in reduction of the spinning processes. The seven steps finally arrived at were (1) opening and mixing, (2) carding, (3) and (4) gilling (intersecting), (5) and (6) gilling (rubber intersecting), (7) ring spinning. The Germans were able to spin an excellent worsted yarn up to single 36s.

The worsted spinners had nearly all changed over from mule spinning to ring spinning. The ring spinning frames were equipped with a high-draft mechanism similar to the Casablanca system. It enabled them to use drafts as high as 20 on a rayon-staple yarn, whereas on a wool yarn it was claimed that drafts up to 15 were possible. They generally were against the use of high spindle speeds and preferred the 2.2-in. rings. It is interesting to find that the spin-regulators built by Siemens & Schuchert were considered

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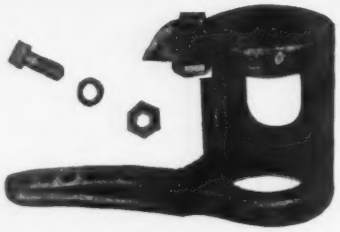

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as of little value. The main objection was that it was too difficult to keep them in perfect working condition and the upkeep was costly.

WOOLEN SPINNING. German woolen mills were found to be well equipped with the best and newest machinery of German make. Many had 100% air conditioning to maintain 72° F. and 80 to 85% r.h. in drawing, 85 to 90% r.h. in spinning. Of the four steps necessary to produce woolen yarns—namely, mixing, oiling, carding, and spinning—all mills combined the first two operations, and placed special emphasis on proper blending with blower delivery. One mill had built the emulsion spray nozzles into the blower pipe which feeds the material to the fearnaught, whereas in another one the oil line was built into the turbo head, and the emulsion sprayed down with the falling stock.

The card sets were either Hartmann or Schwalbe make, mostly 72 in. wide with automatic transfer. Most woolen spinners were convinced of the superiority of the ring spinning frame over the mule, even though may of their mules were equipped with differential drives which, one manufacturer claimed, gave him a 20% higher production.

Weaving is probably the manufacturing operation where the Germans have made the least progress. Of special interest was a high-efficiency mechanical tieing-in machine. This machine knots up to 2,400 ends of the 2-ply warp yarn of the standard uniform cloth in 12 min. The Schoenherr automatic loom was not much favored by the Germans themselves. Out of 200 looms, one woolen mill had only seven automatic looms. All mills limited the weavers to two looms.

FINISHING. The only German specification calling for a non-felting treatment was for the army socks. The wet chlorination process was the only process used.

Even though moth-proofing originated in Germany, the only item the German army insisted upon moth-proofing was the underwear for the air force. Probably the main reason was the high percentage of rabbit hair used (50%) in this blend which, because of its fineness, is an excellent feeding ground for the moth. Mildew-proofing was not considered to be a problem by the German Army.

WATER REPELLENTS. The scarcity of wool had made it necessary to incorporate spun rayon in army-uniform fabrics. Since a water-repellent spun rayon is more like wool than untreated

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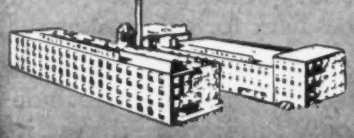

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spun rayon, the order was given by Berlin to all manufacturers of spun rayon to make their fibers water repellent, but the whole plan was abandoned because the reworked stock, which was also being used, contained older rayon which, of course, had not been made water repellent. But there was produced in Germany at one time large quantities of staple fiber which was water repellent.

A large yardage of shelter-half fabric was produced that contained water-repellent fiber in the yarn which was subsequently given a piece-goods treatment with an improved type of water-repellent agent. It is logical to assume, therefore, that tests made on such a fabric would give unusually good results.

The printing plants in Germany were turning out fabrics for civilian consumption right up to the end of the war. A fair yardage of various types of rayons was available to them for this purpose. They were cuprammonium sheers, filament-rayon crepes and flat crepes, and spun rayons.

German work clothes, the equivalent of our overalls, have been indigo dyed for years. During the last year of the war, the dyeing was omitted, not because of a scarcity of dyes, but because of a scarcity of fuel. All industries had to conserve fuel as much as possible; and in the dyeing and printing plants, the number of times a fabric had to be dried in processing was held to a minimum.

FINISHES. Extensive research work was carried on in the field of non-swelling agents. This included the use of formaldehyde alone, the urea and melamine formaldehyde resins, and a late development from the same base as the latest water repellant. This last resin, worked out as far as pilot plant production, could be cured at a temperature around 175° F. It was compatible with the water-repellent product; and, therefore, it was possible to produce a water-repellent and crease-resistant finish in one operation.

Among other items of interest, was a new line of eight dyes. These were called "Astrasons" and were developed primarily for printing on acetate. They have a brilliance equal to the bright basic colors, are fast to washing, and have good to excellent fastness to light. Mills that have used them preferred them to the acetate colors.

GERMAN "NYLON." The Germans had developed a fiber like nylon called Perlon L (omega aminocoprolactam polymer) and were producing 3,500,000 lb. annually. (It should be remembered that the Germans had access to Japanese and Italian silk.) They also produced 4,000,000 lb. annually of a polyvinyl chloride ("Pe Ce") yarn, and lesser amounts of crimped fiber for mixing with wool (Vistra XT and Lanusa-Telusa), hollow-filament staple, and other fibers. But fully 96% of the staple produced was viscose—467,000,000 lb. annually.

Total synthetic yarn production is unknown because of absence of figures from Russian-held territory. It is known, however, that the Germans produced over 28,000,000 lb. annually of rayon tire cord; but it was inferior in quality to that produced in the United States. For twisting, however, the Germans used a machine that inserted two turns for each revolution of the spindle. Such a machine has no counterpart in the United States [but has in England].

The Germans had developed systems for utilizing fiber from flax that had been grown especially for flaxseed, but such devlopments are not generally considered to be of postwar importance.

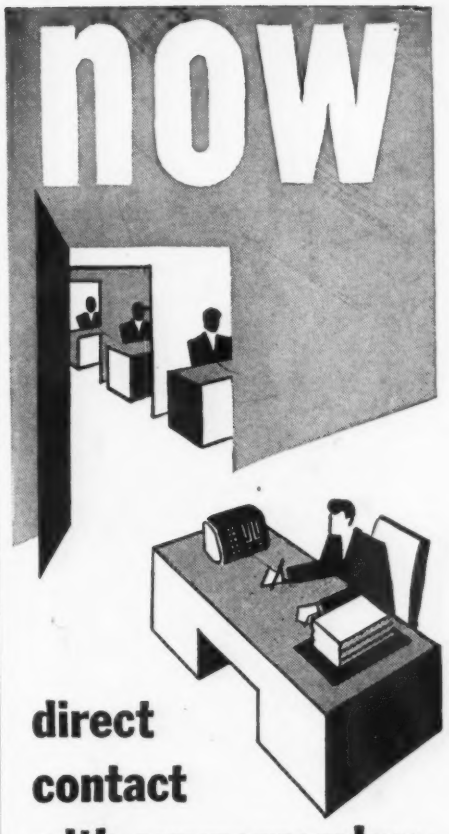
Wool Scouring

(*Continued from page 123*)

were made on all samples. These extractions were made both with petroleum ether and with alcohol to reveal any differences in efficiency in removing fatty acid or grease and soluble soap. A second ether extraction following treatment with hydrochloric acid to show residual lime soap was unsuccessful, as is often the case. Results were inconsistent; some samples showed a gain in weight after extraction. This may be attributed to the fact that calcium oleate is removed to some extent by extracting with ether and alcohol.[8] Because the extractions on the lime-pulled wool failed to show the difference that was easily discerned by the eye, a commercial scourer courteously offered to repeat the extractions using the regular A.C.P. technique. These data are given in Table III, together with the standard Soxhlets which were run in the institute laboratory. It is interesting to note that the commercial extractions, using carbon tetrachloride and fairly large samples of wool, correlate more closely than the ether extractions with the appearance of the wool.

DAMAGE SLIGHT. To determine possible damage to the wool, Pauly tests were made on all samples. The amount of damage to any sample was very slight, and differences between samples scoured with and without sodium tetraphosphate were reported as insignificant, falling within the range of error in method and sampling.

As stated above, visual inspection



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showed the tetraphosphate-scoured wools to be of superior whiteness, but additional evidence was also required, and samples of stock were therefore carded to insure thorough blending. Pads were then made from the card lap in standard padding machines by a modified procedure, using no hot water or soap, to preserve the original difference in whiteness. Large differences between these pads were visible to the eye, so a quantitative examination was made on the recording spectrophotometer (For one result, see Fig. 1).

Four samples of each type of wool were tested, three of these for reflectance at 550 mu, and one in the range of from 400 to 700 mu. It is seen from the data given in Table III that the tetraphosphate increases the whiteness, or reflectance, of the Cape wool by 11.8% and the Texas by 6.7%, while the lime-pulled wool shows a decrease of 1.1%. Inconsistency of results with pulled wool indicate that further study is necessary, but it should be noted that the liquors in this test were brought back to strength just before scouring the pulled wool (as reported in Table II, Section A); and the addition of soap and alkali, plus the use of fresh liquor in bowl 3, was in all probability instrumental in this inconsistency. The scour with sodium tetraphosphate was completed without fortification of the liquors.

It is recognized that this experimental scour was less thorough, and consequently less severe, than a normal commercial scour, as indicated by the extraction data. However, the scours with and without sodium tetraphosphate were identical, and it follows that the phosphate effect will be noted in a commercial scour as well. Actually, it is not uncommon for mills to scour to an ether extraction of from 1 to 2%, although in the worsted trade 0.5% is probably the maximum allowable grease content. Some scourers operate at 135° F., which greatly improves grease removal; and considerably more alkali is often carried. The author considered for a time the possibility of running a scour under average commercial conditions, but was forced to conclude that a normal or average scour simply does not exist. Examples in the literature may show a range of several hundred percent in the recommended amounts of soap or alkali, while in practice these amounts are governed by frequent, perhaps hourly, extractions on the product of each bowl.

Spinning quality of the Cape wool was then tested by picking, carding, and spinning this wool (with and without the tetraphosphate scour) on standard Davis & Furber woolen machinery. Both lots were given duplicate treatment and spun to 3½-run yarn simultaneously on a Davis & Furber woolen ring spinning frame. All spinning factors were therefore identical. No difficulties were encountered, the two lots spun equally well.

IMPROVED STRENGTH. The yarns were then tested for strength on a standard Scott tester and compared (see Table IV). This test clearly shows that the yarn made from the sodium-tetraphosphate scoured Cape wool is consistently 13.2% stronger than that made from the same wool scoured with soap and soda ash.

The results of this yarn test were so interesting that samples of roping from the card were stapled out, revealing that the tetraphosphate scour had increased the percentage of staple of maximum length, although, as is to be expected, it had had no effect upon the maximum length itself. The extent of this increase in the mean length of staple is clearly seen in the photograph (Fig. 2).

It is believed that the increase in yarn strength is dependent upon the larger percentage of maximum length staple. This, in turn, is effected by the ability of the sodium tetraphosphate to produce a loftier, more open wool which lends itself readily to carding and which, by virtue of its openness, offers less resistance to the separating action of the card wires, with a consequent reduction in staple breakage. This discovery is of such significance to worsted manufacturers that a more exhaustive investigation is under way.

FURTHER TESTS. Following these tests, several hundred pounds of greasy Texas were run at the institute under the supervision of a commercial scourer. In the first part of this scour, he used a quantity of soap representing a 50% reduction on the amount used by the institute, replacing this with 20% sodium tetraphosphate on the weigth of the original soap charge. This ratio was not preserved throughout the run, since the supervisor altered the amounts of soap and alkali to produce the desired quality of wool as measured by subjective examination of samples from the squeeze rolls and the dryer. That is, a good commercial scour was produced without regard to the chemical consumption. He then drained the bowls, refilling with sodium tetraphosphate and soda ash only, entirely omitting the soap. As the quality of the wool produced appeared to be slightly substandard, he increased the alkali concentration midway in the second run, with some improvement in whiteness. In all of these scours the temperature was carried at 125° F. in the first three bowls, and

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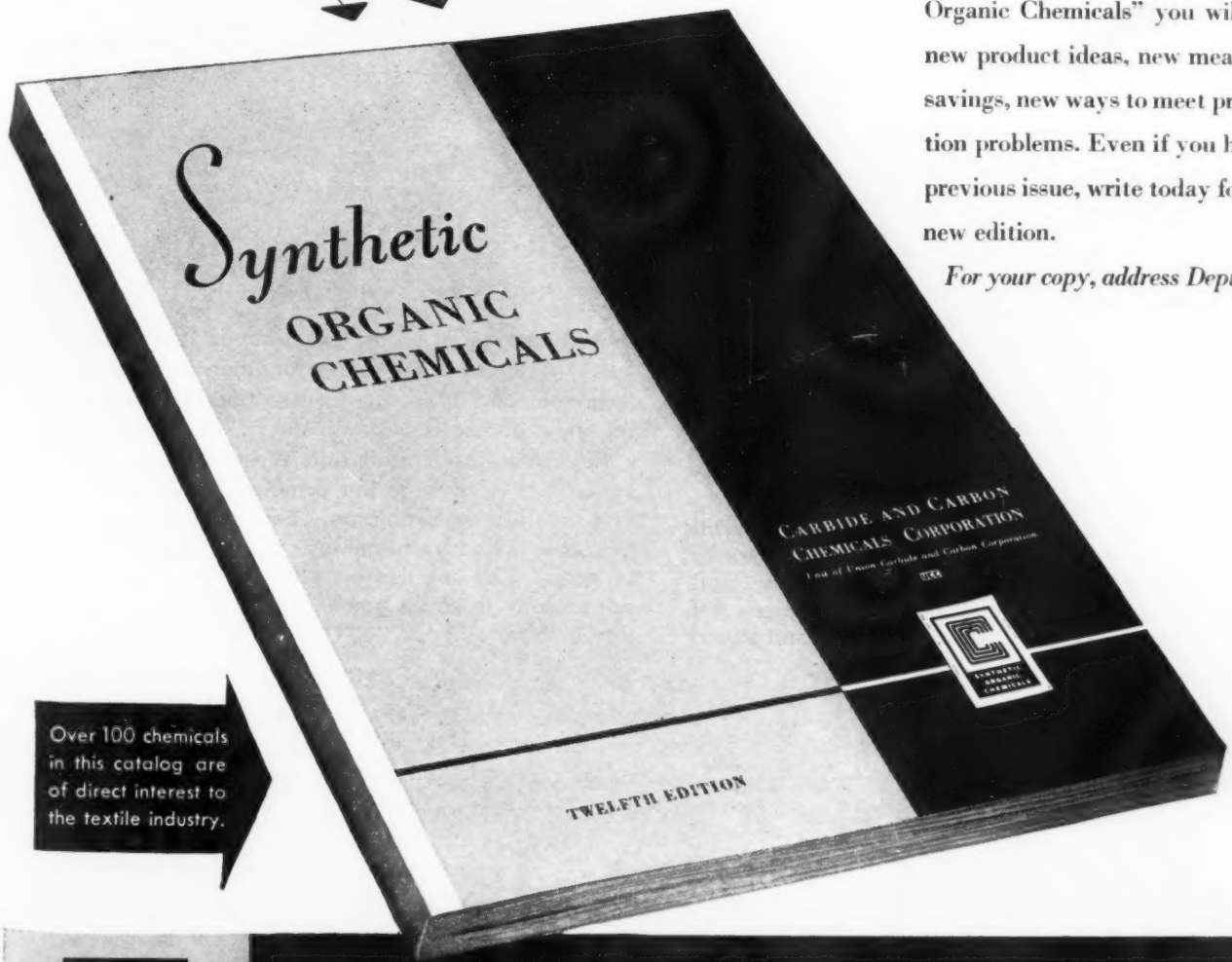

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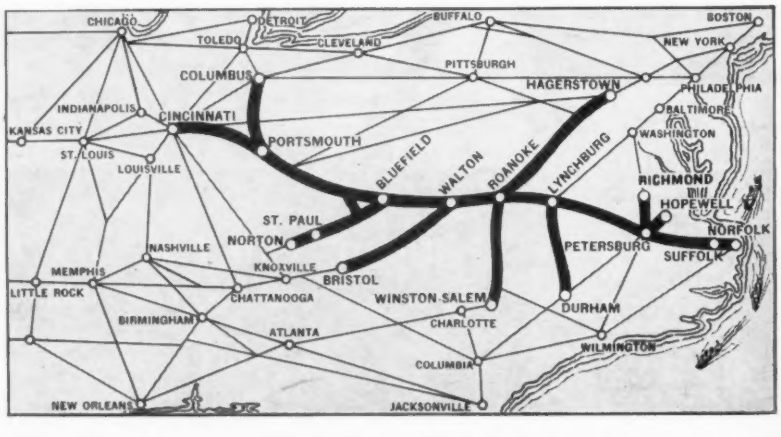

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120° F. in the fourth. Materials used were as shown in Table V.

Commercial extractions were made on the wool produced by each of these scours, for which the average values are:

First scour, phosphate, soap, and alkali	1.35%
Second scour, Part A, phosphate and alkali	1.78%
Second scour, Part B, phosphate and alkali	1.68%

The evidence offered by this relatively rough work indicates that there is a real need for a small amount of soap in the scour, and that the use of sodium tetraphosphate results in a reduction of the soap requirement, but by no means results in its complete elimination. Without going deeply into the theory of wool-grease removal, it seems established that, while some saponification of the grease may take place, as suggested by certain investigators, the amount of soap thus formed is insignificant at the temperature and alkalinity of the scouring process, and soap must therefore be introduced into the liquor. Increasing the amount of alkali shows some benefit, but far less than is produced by an identical amount of soap. It further appears that there is no advantage in using more sodium tetraphosphate than is required to soften the water, as was the case in the second scour.

CONFLICTING THEORIES. In formulating an explanation of the mechanism by which sodium tetraphosphate produces these effects, there is a sharp conflict between the water-softening theory as expounded by Fiske and Bryan, and others, and the actual performance of the material under practical mill conditions. That is, water softening is only a part, and a comparatively small part, of the role played by sodium tetraphosphate in wool scouring and in many other detergent processes. In the first part of this study (September issue) there was reported the importance of preventing precipitation of the soap used in scouring, especially the problems arising from the presence of insoluble soap in the stock. Also considered was the value of neutralizing any lime salts present in the wool, as well as in the water supply; and, like previous investigations, its reasoning is based upon the premise that only if the water is completely softened and only if the wool is completely conditioned will these desirable results be produced.

In the scouring tests described, sodium tetraphosphate was used in quantity insufficient to soften the water completely; it was much less than required to dissolve lime compounds contained in the wool. It is easy to calculate that the amount of tetraphosphate in this work was from 40 to 60% less than that required for total softening, yet particularly fine results were obtained. Some reason for this must be found.

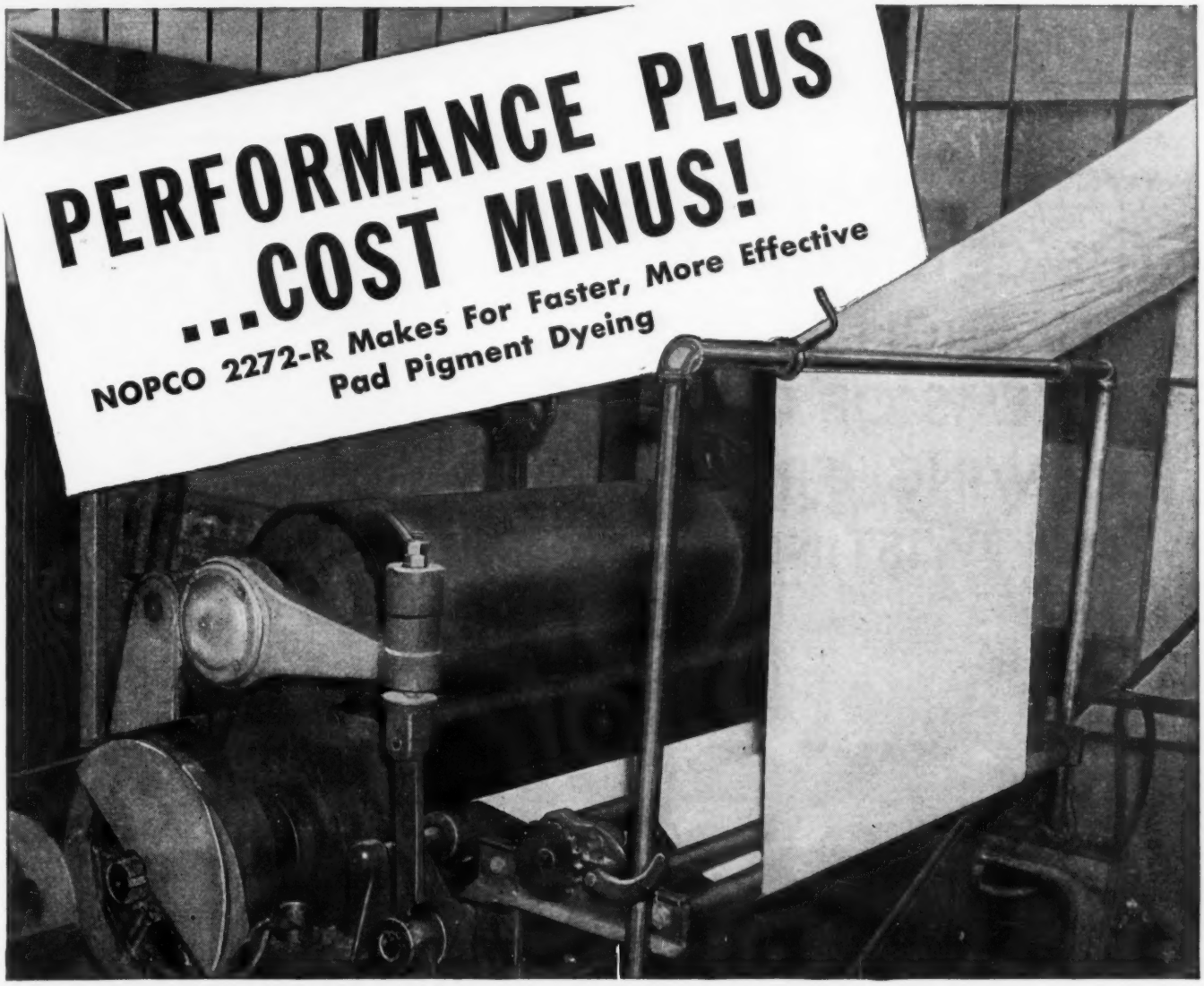
USE AS DETERGENT. The use of sodium tetraphosphate as a detergent has been practiced for some time by the author, who has found the material of great value as an associate emulsifier for fats and oils, and an excellent deflocculant for solid soil particles. Work in the laboratory and the field as well has long since established this material as a dispersant for paper-coating colors, ceramic-casting slips, and oil-well drilling mud; and it is no more than logical to expect the tetraphosphate to function equally well in holding soil in suspension.

The effect of sodium tetraphosphate upon oil-in-water emulsions stabilized with soap or soap-like materials is not so well known. However, within the last two years this problem has been given some attention by the author and many industrial laboratories. It has been found that a mixture of sodium tetraphosphate and soap is much more effective than soap alone in stabilizing an oil-water emulsion, whether the soap is dissolved in the water or is formed *in situ* by mixing oil containing fatty, acid with water containing a saponifying agent. The latter mechanism has been thought to be operative in scouring wool, but the evidence is that no appreciable amount of soap is formed.

Laboratory work indicates that the tetraphosphate is of little value as an emulsifier except in the presence of a surface-active agent, and this view is confirmed by the current investigation, in which the combination of tetraphosphate and soap is far superior to tetraphosphate and soda ash.

PROBABLE SURFACE-EFFECTS. The reason for the surprising efficiency of the phosphate at relatively low concentration may be due to surface effects. That is, the reactions may be taking place upon the surfaces of the grease, soil, and lime compounds without involving chemical reaction with the mass of the contaminating material. This would be particularly true in the presence of soap, which would provide a better contact between the tetraphosphate solution and the surface to be cleansed. It is believed, however, that sufficient tetraphosphate for complete softening should be used for maximum detergency, especially in scouring pulled wools.

A conclusion is that the use of sodium tetraphosphate as an adjuvant to the soap and alkali commonly em-



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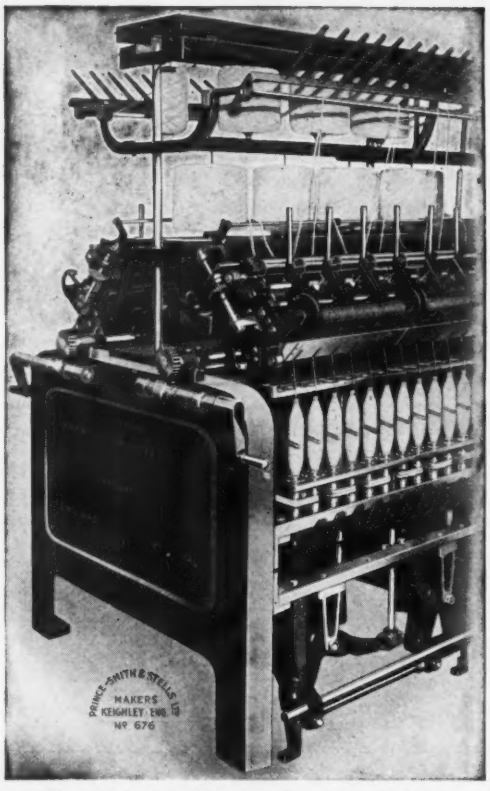

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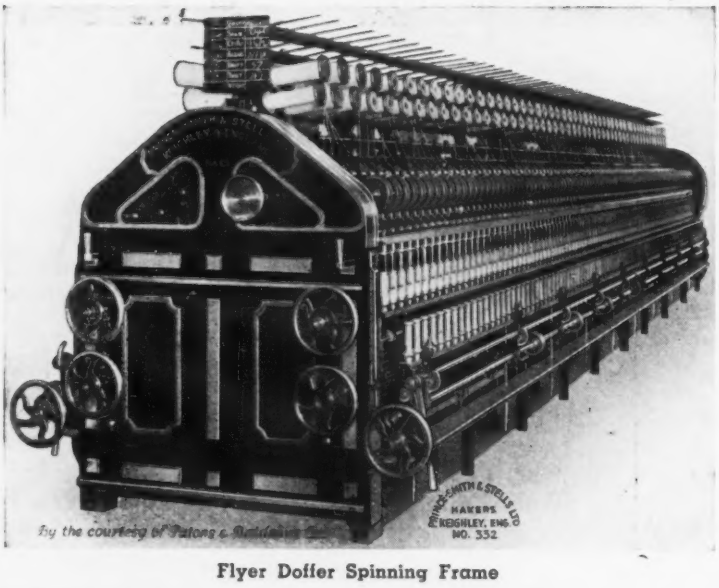

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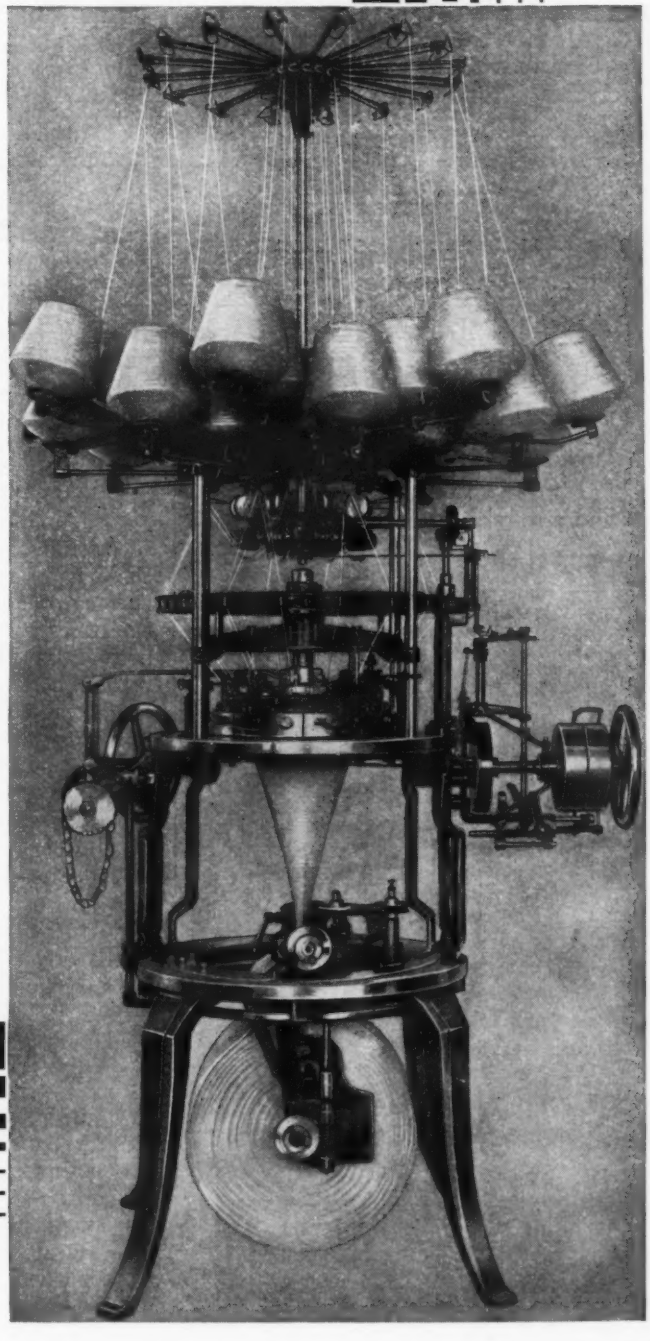

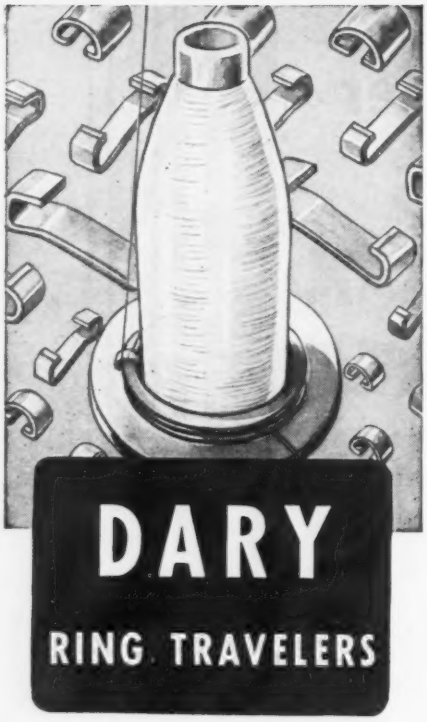

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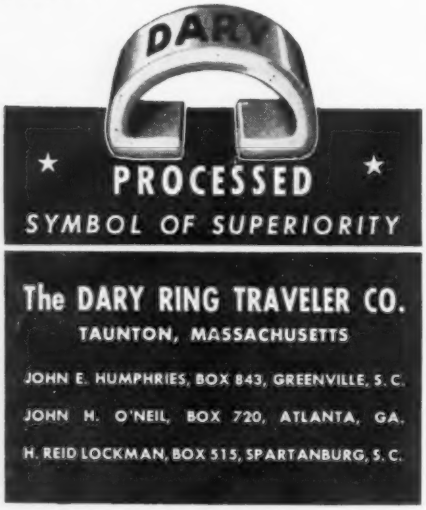
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ployed in wool scouring will produce a whiter, loftier wool containing less grease and having superior carding properties, from which stronger yarns can be made. Also, the use of 10 to 25% of sodium tetraphosphate calculated on the original weight of soap will reduce the soap requirement from 25 to 50%, but complete elimination of the soap is neither desirable nor possible. This problem is worthy of further study; and work is in progress to determine with greater accuracy the optimum ratio of sodium tetraphosphate to soap, as well as the full extent of the effect of this phosphate upon noilage, staple length, and yarn strength.

[5] *U. S. Patent 2,092,913.*
[6] *Skinkle, J. H., "Textile Testing."*

ACKNOWLEDGMENT: The author gratefully acknowledges the assistance and advice generously given by the staff of Lowell Textile Institute, by many friends in the industry, and by his associates in the laboratory and technical service department of Rumford Chemical Works.

Package-Dyed Cloth

(*Continued from page 141*)

(i.e., after five minutes of dyeing), but the shades level or become equal on both skeins after 40 minutes of dyeing.

It is interesting to note that, following the principles of selection of vat dyestuffs and using vat retarding agents on the market, vat dyestuffs can be successfully applied as a class to viscose rayon staple in loose form or to cheeses or cones of spun-rayon yarn, the cones or cheeses being wound on perforated tubes, preferably of stainless steel. This is because a slack and readily permeable package can be built up and consequently the necessary rate of flow of vat liquor achieved.

One of Courtaulds' most recent developments in package dyeing is the dyeing of narrow fabrics, including ribbons and heavy webbing in roll form. The ribbon or webbing is blocked slackly onto perforated tubes, which are then dressed on the perforated spindles of the cake dyeing machine. In this way, approximately a quarter million yards of tape has been dyed in one set in a large machine.

Spun-viscose-rayon ribbons and webbing have also been dyed successfully, but poor results were obtained with earlier trials on cotton webbing and continuous filament rayon ribbons. The cause of the unlevelness of shade was that the rolls were too tight. By blocking the rolls without tension to give a very slack make-up and by not screwing down tightly the nut at the top of each spindle, you achieve channelling of dye liquor between the rolls and circulation between the laps of fabric in the roll to permit rapid replacement of spent dye liquor by fresh dye liquor; and level results were obtained. Both radial and axial flow occurs in roll dyeing when the rolls are blocked on perforated tubes.

Several hundred tons of British Army, Navy, and Air Force equipment webbing have been dyed, rotproofed, and waterproofed in Courtaulds' cake-dyeing plant.

A logical development of the dyeing of narrow fabrics in roll form was the dyeing of wide fabrics in roll form. The fabric is wrapped slackly on a perforated stainless-steel drum, which is then fixed on the perforated spindle of the cake machine. On a 42-spindle machine it is, therefore, possible to dye 42 rolls of fabric in one set. Further work is proceeding on this development, but it has already proved very satisfactory in dyeing spun-viscose-rayon and acetate-blend fabrics and also 100% spun-viscose-rayon fabric. Since there is no end-to-end tension on the fabric during dyeing, a fuller handle is achieved, compared with that of a fabric dyed either on the winch or in the jigger.

The importance of allowing adequate shrinkage to occur during tentering the spun-rayon fabric must be stressed as also playing an important part in the production of a full handling cloth.

FINISHING. In discussing finishing of spun-viscose-rayon fabrics, Mr. Wilcock stated that fabrics made from fine staple (1.5 den.) require over 70% more dye than fabrics made from coarse (4.5 den.), to get the same depth of shade.

Aftertreatments, he said, can improve the fastness of colors to washing; but at least one such treatment (Fibrofix) impairs light fastness. Fastness to light can be improved by use of a specific copper-acetate solution.

Unlike acetate-rayon-staple fabrics, viscose-staple fabrics generally need crease-resistant finishes such as the Tootal Broadhurst Lee urea-formaldehyde treatment; but the results obtained can vary enormously. One variation is caused by migration, another by failure to get the finish into the individual fibers, and a third by poor curing.

Tone-in-tone and many other dye effects can be achieved by blends with Ravolanda, according to Mr. Penn. This fiber, a viscose-rayon staple aftertreated to increase its nitrogen content, is not produced in the United States.

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Liquid Chlorine	Light orange liquid or greenish yellow gas of uniform high quality.	Treating process water. Preparation of hypochlorite bleaching solutions.
Lauryl Pyridinium Chloride	A mottled tan semi-solid. Solubility in water is 60 gms per 100 gms of water.	As a cationic detergent to keep spinerettes* clean. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Sodium Sulfide	A light yellow colored solid relatively free from iron and other heavy metal salts.	In desulfurizing rayon yarn. Manufacture of dyes.
Sodium Sulfhydrate	A light yellow colored solid of high purity and negligible metal content.	For preparation of desulfurizing bath. Manufacture of dyes.

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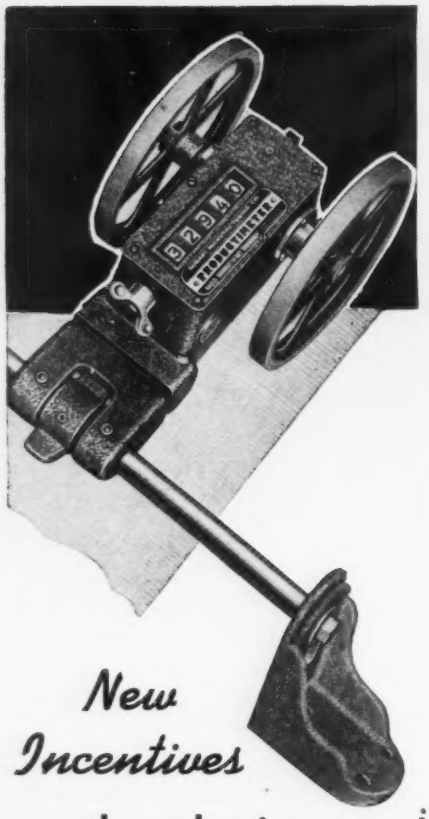

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READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 228. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y. Be sure to give your name and company connections.

1. Adjustable warp beams built on patented principles of construction are illustrated in Catalog No. 45 released by Milton Machine Works. The manner in which old and new beams are made adjustable in width are explained.

2. New and finer deniers of rayon staple fibers are introduced in a bulletin published by the American Viscose Corp. Several swatches of fabrics made from the new deniers, 1.0 and 1.25, are pasted in the booklet. Production of the new fibers is said to be limited until additional equipment becomes available.

3. A new needle-bearing handbook which gives much engineering and application data has been published by The Torrington Co. Described as edition No. 32, the 153-page manual is well illustrated and indexed for ready reference.

4. Photocopying machines for a number of industrial uses are described in a booklet issued by Orco Cameras, Inc., Div. of Photo Record Corp. The machines are available in several sizes, and a number of models are illustrated.

5. Applications of overhead cleaners installed by the American Monorail Co. are illustrated in the August issue of the company's *The Swirling Column*. Maintenance costs, adjustments to cleaning velocity, and assemblies for mounting the cleaners are briefly discussed.

6. A new sizing development for nylon hosiery yarn is announced in "Syzon," a leaflet recently issued by L. Sonneborn Sons, Inc. It is said that Syzon produces a tough, resilient film which remains insensitive to changes in humidity and temperature.

7. Analyzing rotproof yarns, thread, twine, and rope for controlling the fungicide content is discussed in a new bulletin made available by Research & Development, Nuodex Products Co., Inc. It is said that the analyses described combine accuracy, speed, and applicability.

8. Redyeing government olive drab for the purpose of converting inventories to meet consumer demands is the subject of Bulletin No. 779, released by The Calco Chemical Div., American Cyanamid Co. The recommendations made are the result of special research on this problem.

9. Lubrication schedules for several models of Universal winding machines are given in No. 52 of a Series on "Getting the Most from Winding," issued by Universal Winding Co. The schedules specify machine parts and the lubricant which should be used.

10. Informative labels which will reflect the wearing qualities of fabrics are advocated in a bulletin by Good Housekeeping Institute. The purpose of the bulletin is to encourage manufacturers to provide more labels to serve as guides for consumers.

11. Resistance of fabrics treated with Zelan is illustrated in a booklet entitled "Winter Wearables for the Entire Family," published by E. I. du Pont de Nemours & Co., Inc. Advantages mentioned are lasting fit, color, and water repellency.

12. Correct colors for increasing efficiency, safety, health, and comfort are discussed in "New Concepts of Color," published by McDougall-Butler Co., Inc. The booklet answers many questions concerning proper color schemes for plants and offices, and includes photographs of results in actual cases.

13. Gas welding and cutting supplies and accessories are listed in the latest catalog, No. 40, being distributed by Air Reduction Sales Co.. Prices, sizes, and stock numbers of the various supplies are given.

14. Electronics in air filtration is the theme of the well-illustrated booklet published by the American Air Filter Co., Inc. The booklet explains how the theory and practice of electronics are being used for more effective air filtering.

15. Guidance manuals for supervisors are described in an illustrated catalog offered by Elliott Service Co. Seven manuals for improving supervisory work are presented.

16. Textile mill heaters for low installation and operating costs and for elimination

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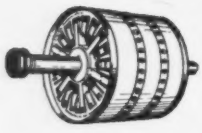

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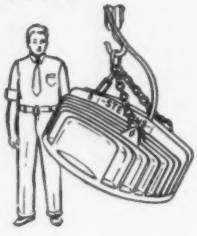
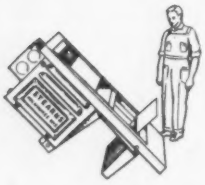
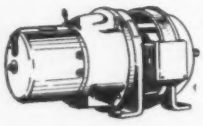
Stearns Suspended Separation Magnets, Bulletin 25. Lifting Magnets, Bulletin 35, all sizes and shapes.

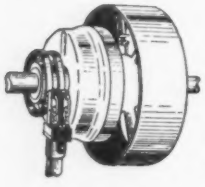




Stearns Automatic Spout Magnets for catching tramp iron in your material flow. Bulletin 92.

Stearns Magnetic Disc Brakes stop over-running motors and machinery. Rugged and compact design. Bulletin 604.





Stearns Magnet Clutches and Clutch-Brake units for near or remote control on Machinery. Bulletin 225.

Investigate the Stearns Air Duct Magnet for collecting tramp iron as well as arresting flow of other non-magnetic objects found in cotton, wool, shoddy and other material, an effective, automatic strong magnet designed especially for the textile industdy.

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of spotty humidification are illustrated and described in a section of Catalog No. 396-10, issued by B. F. Sturtevant Co. Instructions to aid in the selection of the proper heaters are given.

17. Prolonging the life of endless belts by using the extensible tip splice is discussed in a new bulletin issued by The Manhattan Rubber Mfg. Div., Raybestos-Manhattan, Inc. The splice is explained by installation photographs and schematic diagrams.

18. Recorders for machine time and speed are presented in "Solving Industrial Crimes," published by The Esterline-Angus Co., Inc. Several recorders are illustrated and their uses described.

19. The human eye in industry and the importance of studying the visual needs of a particular job in a particular industry are discussed in Vol. 21, No. 1, of the Bausch & Lomb Magazine. Several reasons why mill management should make a study of this subject are pointed out.

20. The progress of several American industries, including the textile, through the last 90 years is briefly reviewed in the July-August issue of *Valve World*, published by The Crane Co. The booklet is illustrated with photographs of the various industries discussed.

21. Drying of textiles by means of multiple-unit tenter-frame dryers which operate continuously and which can be adapted for a wide range of fabrics is discussed in a 4-page leaflet issued by Industrial Air Co. It is stated that the Industaire dryers reduce the moisture content of certain textiles from 50% to 4% at drying speeds of 120 to 160 yards per minute.

22. Improving starch sizing-compounds by the use of a synthetic gum, sold under the trade name of Rhotex size, is the subject of an article appearing in the August issue of the *Rohm & Haas Reporter*, published by Rohm & Haas Co. The gum is said to make starch films tougher and more flexible and to reduce the tendency to become brittle.

23. Low-power microscopes with a wide field of vision for use in industrial plants are described in a 4-page folder issued by E. W. Pike & Co., makers of the Flash-O-Lens illuminated magnifier. Illustrations and descriptions of several models of the magnifiers are given.

24. Corrosion-resistant valves, made in a wide range of metals and alloys for a variety of applications, are presented in a booklet by the Wm. Powell Co. It is stated that if special flow-control problems are encountered, the company's engineers will design a special valve to fit the condition.

25. The story of rayon's use in tires is told in a 16-page illustrated booklet, "Rolling on Rayon," released by Industrial Rayon Corp. The use of rayon for tire cords is said to have increased more than twenty times over the prewar volume.

26. "What Happened to the Azo Dyes," published by the Calco Chemical Div., American Cyanamid Co., is a brief statement of the diversion of the Azo dyes from industrial uses to the role of a war material.

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This mailing coupon is a convenient size to paste on a penny postcard. ***Circle the numbers of the catalogs you want*** *which correspond to the number on the descriptive paragraphs. Fill out the coupon* ***legibly*** *and* ***completely.*** *Paste it on a postcard, or put it in an envelope if you prefer, and mail it to Textile World, 330 W. 42nd St., New York 18,, N. Y.*

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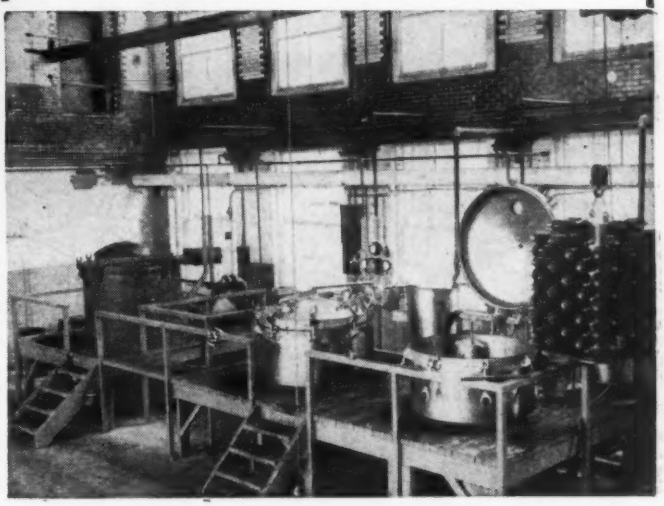

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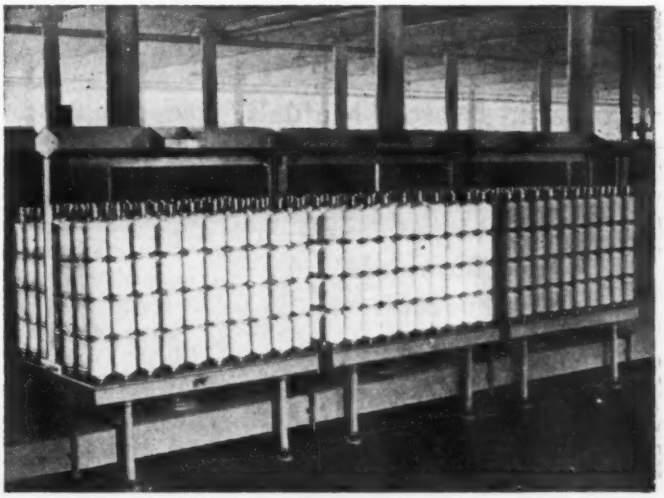

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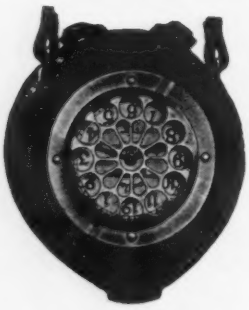

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News of the month

STA Meetings. Four divisional meetings of the Southern Textile Association will be held this fall in addition to the annual convention at Charlotte, N. C., on Dec. 8. The divisional schedule is as follows: Gaston County Division at Gastonia, N. C., Oct. 26; Eastern Carolina Division at Durham, N. C., Nov. 10; Northern North Carolina-Virginia Division at Greensboro, N. C., Nov. 17; South Carolina Division (combined meeting of carding-spinning section and weaving section) at Clemson, S. C., Dec. 1.

Japan Drops as Rayon Producer. Japan's prewar threat to the world as a producer of rayon yarns and fabrics is ended for some years, if not forever, according to Harry Riemer, editor of the *Daily News Record*, in an exclusive interview with Iwajiro Noda, president of the Japan Cotton & Silk Trading Co., wired from Tokyo. Although Japan had become an important factor, particularly in staple fiber, Mr. Noda told Mr. Riemer, now it has neither pulp nor chemicals. The former heretofore had come from Finland, Sweden, and America. Noda doubts Japan's ability to return to prominence in the synthetics field, quoting figures of 380,000 looms weaving silk and rayon before the war compared with about 100,000 now.

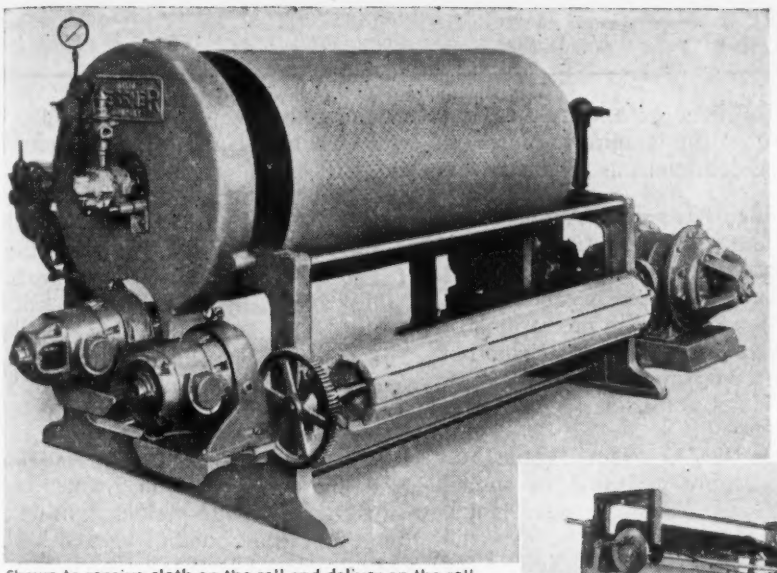
Confer on Human Relations. The 26th annual session of the Southern Conference on Human Relations in Industry, was held at Greenville, S. C., Sept. 13 to 15. The meeting, which attracted 200 industrial representatives from some 10 states, is normally held at Blue Ridge, N. C., but was moved this year. Congressman Ramspect, member of the House Labor Committee and Democratic party whip, who spoke, said he hopes "we won't have to go back to a policy of made-work", which, he stated, would solve nothing except "the existence of those who get jobs through the program." The general impression is, the congressman stated, that the Secretary of Labor is able to get almost anything he wants and that he "wants to be fair to both management and labor". Other speakers during the three-day meeting included Lee H. Hill, publisher of *Electrical World* and *Electrical Contracting*; Dr. Allan Stockdale, of National Association of Manufacturers; Forrest Kirkpatrick, of Radio Corp. of America; Stewart Lowry, of Methods Engineering Council; Guy B. Arthur, Jr., of American Thread Co.; Sam L. H. Burk, of Atlantic Refining Co.; Glenn Gardiner, of Forstmann Woolen Co.; O. L. Beardsley, of General Motors Corp.; and Rev. George Heaton, Charlotte, N. C.

Times Style Show. "Fashions of the Times—4th Edition", the *New York Times* annual dramatic style presentation created by its fashion editor, Virginia Pope, will be held Oct. 23 to 26 with eight showings in the Times Theater. Leading manufacturers designers, fabric mills, and accessory houses are cooperating.

Courtaulds Not Overlooking Silk. Courtaulds expansion plans are reported from Britain to include the manufacture of plastics and chemicals, and the new Lancashire plant may also experiment with new looms for natural silk. Samuel Courtaulds thinks silk still has a future if the lag in machinery is made good.

Carpet Institute Aids Retailers. A one-day merchandising clinic on "How to Sell More Rugs and Carpets" was held at the Waldorf Astoria in New York on Oct. 17. Sponsored by Leroy A. Beers, president of the Institute of Carpet Manufacturers of America, the clinic brought together retailers from all sections of the country.

British Wool Pool. Under the British Empire wool pool, four governments will form a joint organization incorporated as a private registered company. The capital is to consist of eight shares, four held by nominees of Britain, two by nominees of Australia, and one each by New Zealand and South Africa. The company will have three subsidiaries acting for it, one in each Dominion. The joint organization will buy, hold, and sell wool, as agents for governments. New wool clips are not to be acquired by bulk contracts but these and existing surplus wool are to be auctioned as before the war, subject only to reserves and minimum prices. These are to be fixed prior to the opening of each wool season not by the joint organization, but by representatives of the four governments. Thus a careful balance is established



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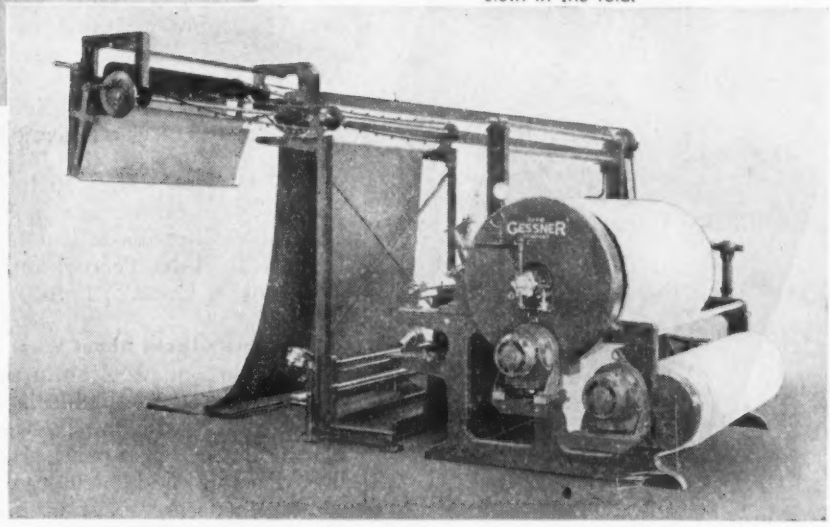

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G-E Watch Dog Fluorescent Starters have been providing efficient and economical service for 30-, 40- and 100-watt lamps in commercial and industrial lighting fixtures for several years. These manual reset starters have saved many manhours of maintenance. They've extended the life of fluorescent lamps with precision starting and positive stopping. Users of fluorescent lighting, engineers and maintenance men all over the nation are switching to Watch Dog Starters, the preferred safeguards for fluorescent lamps.

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1. USERS in stores, offices and factories appreciate lighting fixtures equipped with Watch Dog Starters because they eliminate annoying blink once and for all.

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For the complete story about G-E Watch Dog Starters, write to Section G1055-109, Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

GENERAL ELECTRIC

between Britain as a consumer and owner of existing empire surplus, and the three dominions as producers.

CTI Meeting Postponed. Annual meeting of the Cotton-Textile Institute, originally set for Oct. 24 and 25 at New York, has been postponed till Nov. 28 and 29 due to preempting of hotel space for the Naval celebration that week. Meeting will be at Waldorf-Astoria Hotel as usual.

TRI Meets Nov. 9. The Textile Research Institute will hold its annual meeting at Waldorf-Astoria Hotel, New York, on Nov. 9. At the luncheon, Prof. H. D. Smyth, of Princeton, will speak on atomic energy.

AATCC to Meet. The "Victory Convention" of the American Association of Textile Chemists & Colorists will be held at Hotel Pennsylvania, New York, Jan. 3, 4, and 5, 1946.

Technologists Learn About Wool Shrinkage. "No one wool shrinkproofing method is entirely suitable in itself," reported Dr. D. R. Powers, Monsanto Chemical Co., in a recent talk delivered before the September meeting of the American Association of Textile Technologists held in New York. Wool fabrics may be stabilized by mechanical, chemical, and by resinous means or a combination of these methods. Continuing, Dr. Powers stated, "To obtain woolens and worsteds with one to two percent shrinkage it will be necessary to combine the resin with the mechanical processes. The resin stops and reduces the relaxation. The mechanical process of sponging takes out the remaining three to ten percent." Dr. Henry Eyring, acting director, Textile Foundation, spoke on "The Value of Fundamental Research to the Textile Industry."

Yarn Numbering. Adoption of a universal yarn-numbering system was approved in principle by vote at a British conference on a universal system sponsored by the Textile Institute of Great Britain. It was agreed to adopt a direct system using decimals, but the units of lengths and weights to be used have not as yet been decided upon. The conference showed preference for a system based on metric units and pointed toward the possible adoption of the Grex system. Decision on lengths and weights to be used will not be made before next month.

Mills Receive "E" Awards: Recent Army-Navy "E" pennant awards of interest to the textile industry went to the following companies: Shelbyville, Tenn., plant of U. S. Rubber Co., fifth award; Rowan Cotton Mills, Salisbury, N. C., second award; Buffalo Pumps, Inc., Buffalo, N. Y., fifth award; Brookside Mills, Knoxville, Tenn., fourth award; Nashawena Mills, New Bedford, Mass., fifth award; Everlastik Knitting Mills, Philadelphia, Pa.; Faith Mills, Inc., Averill Park, N. Y., third award; U. S. Rubber Co., Providence, R. I.

Dan River Reports New Finishes. New finishes for cotton roving and yarns treated with various synthetic resins and other bonding agents, have been developed by the Research Engineering Division of Riverside & Dan River Cotton Mills, Danville, Va.

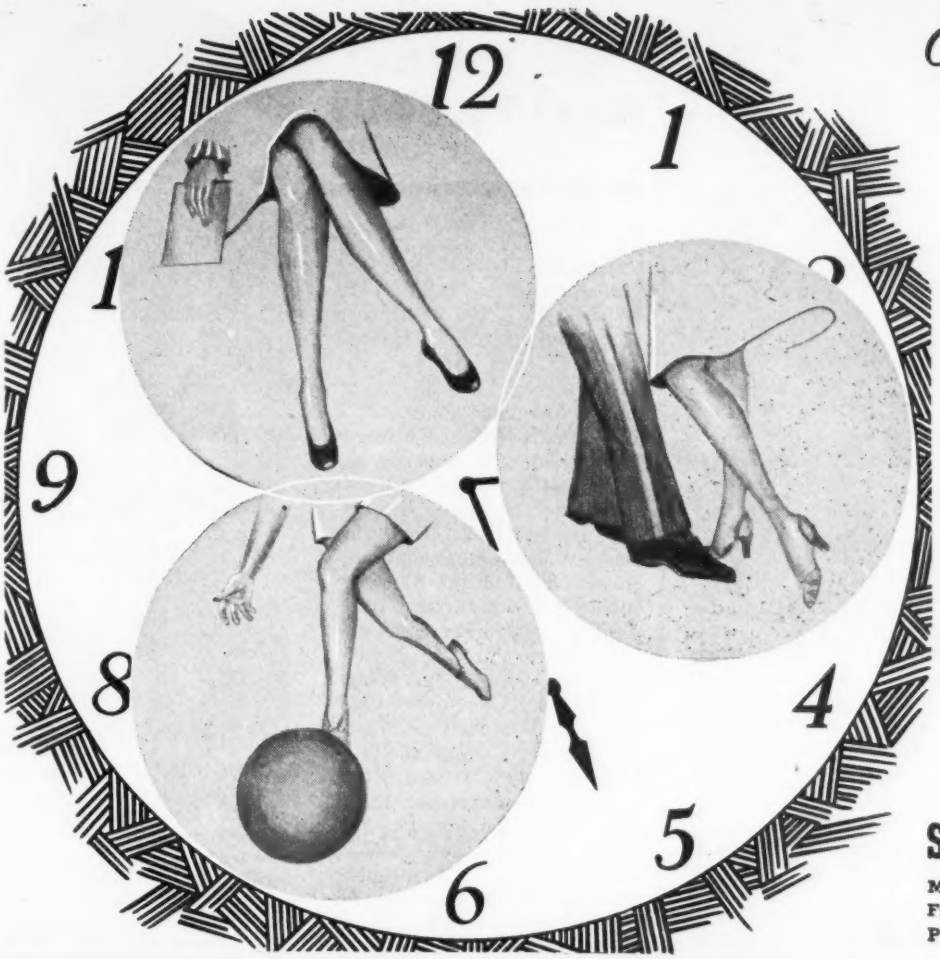
PTMA to Mark 25th Year. The Philadelphia Textile Manufacturers Association will celebrate its twenty-fifth anniversary on Dec. 18 with dinner at Bellevue-Stratford Hotel. The principal speaker will be announced later by C. Marlin Bell, managing director of the association.

Whitman Renovates. William Whitman, Inc., has renovated and modernized its offices and sales departments at 261 Fifth Ave., New York. The executive offices have been rearranged and a completely new lighting system has been installed throughout the general offices and selling department.

Employee Benefit Plan. S. Stroock & Co., Inc., have established a complete and comprehensive employee benefit plan for all of its mill and office workers at the plant at Newburgh, N. Y., and for all office, sales, and executive employees in New York. It provides free life insurance, accident and health insurance, hospitalization, surgical and medical care benefits, the company defraying the entire cost.

Scholarship Established. A scholarship for graduate work in silk and nylon research at Lowell Textile Institute, Lowell, Mass., has been established by Joseph P. Kennedy, former Ambassador to Great Britain, in memory of his son who was killed on an air mission to Europe. The scholarship, for $1,200 will be available to Massachusetts students only.

Nashua Receives Award. Nashua Mfg. Co., Nashua, N. H., has been awarded a highest merit certificate by *Financial World* for the excellence of its 1944 annual report to stockholders. The report was judged on content, typography, and format, and was one of 2,500 examined during 1945.



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The active legs of today's modern woman, are kept lovely whether at work, recreation or play by *DuraBeau*-finished hose.

They are ever in an aura of beauty, holding the subtle allure of dull, softly-sheer hose. . . Snug, slim-fitting hose stays that way, no matter what activity it undergoes, for *DuraBeau* preserves elasticity, and imparts additional snag resistance . . . it works overtime, too, as a spot and water-repellent.

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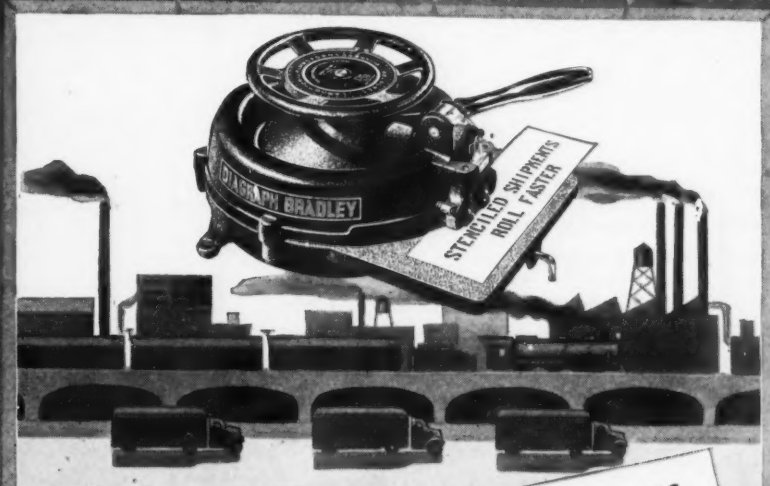

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NEWS ABOUT Suppliers

Emmons Loom Harness Co., Lawrence, Mass. Clifton E. Watson, on leave of absence from Emmons Loom Harness Co. for about 3½ years, has resigned from the War Production Board and will return to his former position as manager of Southern sales. For the last few months, he has been administrator of L-215, the textile machinery order. Mr. Watson was also government presiding officer of the following industry advisory committees: Textile Machinery Industry Advisory Committee; Bobbin & Spool Manufacturers Industry Advisory Committee; Card Clothing Manufacturers Industry Advisory Committee.

Sonoco Products Co., Hartsville, S. C., has leased to National Gypsum Co., Buffalo, N. Y., its paper mill and other real property at Garwood, N. J. National Gypsum will assume control of this property on Jan. 1, 1946, and will manufacture paper board there for its own use. Operations of various converting departments will be continued by Sonoco at Garwood, N.J., for an indefinite period.

Alrose Chemical Co., Providence, R.I., has added Alfred H. Henschel to its technical staff. Mr. Henschel has been in the textile printing and finishing industry since 1930. He will be associated with Archie Stevenson in the technical service offered by the company on its newly-developed fabric stabilization processes for wool, rayon, and cotton.

CHARLES A. DICKHAUT, who has been appointed chief of research and development of the John Waldron Corp., New Brunswick, N. J. He has been with the company for nearly 20 years.

GEORGE C. RAMEY, who has been appointed advertising manager and director of promotion and publicity of the Textile Resin Department of American Cyanamid Co., Bound Brook, N. J. He was recently released from active duty as a lieutenant in United States Naval Aviation. Previously Mr. Ramey was connected with Clarence Whitman & Sons as sales manager of the Wilkes-Barre Lace Mfg. Co.

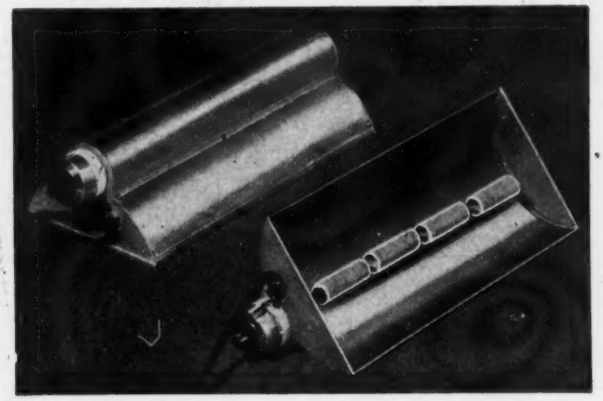
Mathieson Alkali Works, Inc., New York, N.Y., are erecting a new plant at Niagara Falls to double their output of sodium chlorite.

Troy Whitehead Machinery Co., Charlotte, N.C., has named Ira A. Teat as general manager. He has been in the textile machinery business for 15 years.

John A. McPherson Co., Greenville, S.C., has added Job Mills, recently stationed in Terre Haute, Ind., to its textile engineering staff. He was formerly connected with Saco-Lowell Shops.

United States Rubber Co., New York, N.Y., will have doubled the recent production of Lastex yarn for girdles, hosiery, swimsuits, and other wearing apparel by Jan. 1. By June of next year, output is expected to surpass prewar levels.

Stein, Hall & Co., Inc., New York, N.Y., have added John



The Doyle Infrared Dryer can be supplied in a range of sizes to suit a wide variety of applications.

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Cuts the drying bottleneck! Thoroughly proven by years of practical success in industry. Especially good when it can be attached directly to equipment to promote drying during fabricating, printing or other processing. Rugged, economical, easy to install, FAST, embodying the most modern ideas of infrared science. Please describe your requirements fully and expect a prompt, complete answer.

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LEATHER CONDENSER TAPES

DAVIS & FURBER

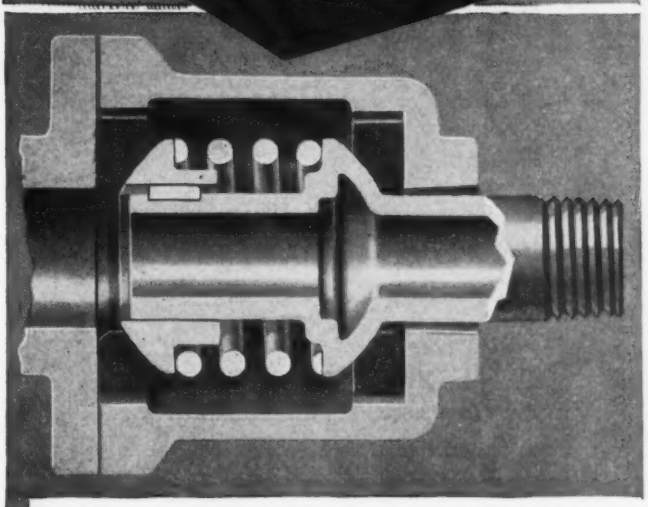
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

First Aid-

. . . for Ailing Production Schedules

JOHNSON Rotary Pressure JOINTS

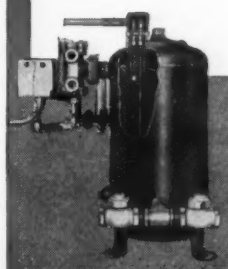


• It's true in many cases — the most effective single step you can take to speed up lagging production is to switch over to Johnson Joints.

Their packless, self-oiling, self-adjusting, self-aligning design ends all the troubles of the old style stuffing boxes and steam fits. Precious man-hours can be released for other tasks. Efficiency-boosting methods of syphon drainage can be employed more satisfactorily.

Yet with all these benefits, the Johnson Joint can pay its own way out of savings in maintenance alone. That's the verdict of hundreds of mills, where scores of thousands of Johnson Joints are helping to meet today's unprecedented demand.

WRITE FOR COMPLETE INFORMATION

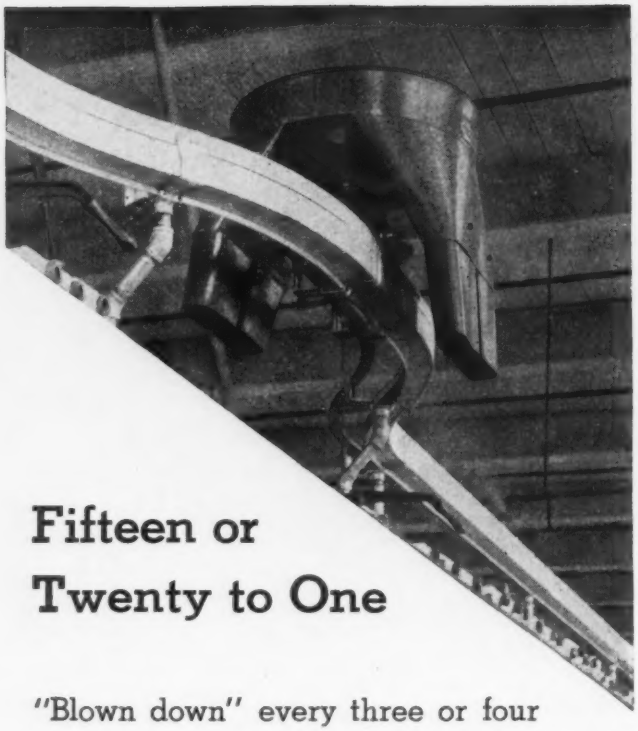


Don't overlook the JOHNSON ELECTRAP

It's replacing expensive pumps and cumbersome tilting traps . . . draining lines under vacuum as complete as 27 inches of mercury. Electrical method of operation brings greater capacity, absolute dependability, and permits remote control for those hard-to-get-at installations.

The Johnson Corporation

814 WOOD STREET THREE RIVERS, MICHIGAN



Fifteen or Twenty to One

"Blown down" every three or four minutes, frames are cleaned by Parks-Turbo Traveling Cleaners.

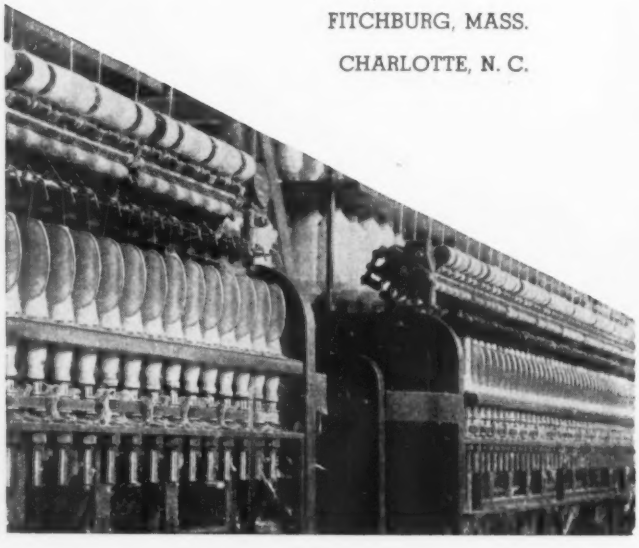
15 or 20 times oftener than is customary by hand. Hand cleaning uses about half the spinner's time.

With ParksTurbo Traveling Cleaners, so much of this hand cleaning is done away with, spinners do what they like to do—more spinning. And they do it with less fatigue.

Parks-Cramer Company

FITCHBURG, MASS.

CHARLOTTE, N. C.



C. Daly to their burlap department. Mr. Daly was recently connected with the U. S. Commercial Corp., New York, in charge of the fats and oils program.

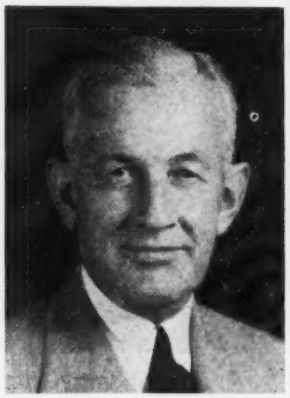
Arthur D. Little, Inc., Cambridge, Mass., has added Howard F. MacMillin to its staff. Mr. MacMillin, formerly president and general manager of the Hydraulic Press Mfg. Co., Mt. Gilead, Ohio, will direct the application to industry of developments in the mechanical engineering and applied physics fields by the Little laboratories.

Corn Products Sales Co., New York, N.Y., has promoted Edward W. Schmitt to the position of bulk sales manager. He has been with the sales department of the company since 1912. In his new capacity, he will direct bulk sales development and the introduction of new industrial products perfected by the company.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has appointed George T. Collins as assistant manager of market research. He was formerly associated with the Barrett Division of Allied Chemical & Dye Corp.

United States Testing Co., Inc., Hoboken, N.J., has installed a quality-control testing and research laboratory at the California, Mo., plant of Moniteau Mills, Inc. The laboratory will be equipped and staffed by the United States Testing Co., and will conduct necessary tests to control the quality of the materials through all stages of manufacture.

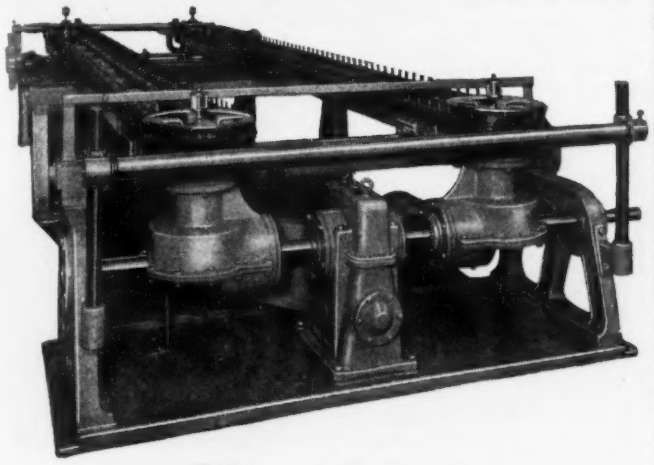
ALFRED RATOWE, who has been transferred from the laboratory to the sales staff of Burkart-Schier Chemical Co., Chattanooga, Tenn. He will act as Eastern representative of the company with headquarters in New York, N. Y.



WILLIAM McNEAR RAND, who has been elected president of Monsanto Chemical Co. to succeed Charles Belknap, who will continue with the company as chairman of its executive committee. For the last eight years, Mr. Rand has been vice president and, since 1943, a member of the executive committee.

Barrett Amalgamated Industries, Inc., New York, has appointed Alfred Jepson to its staff with headquarters in Atlanta, Ga., Mr. Jepson since 1940 has been connected with WPB and recently was Regional Chief of Textile Division with office in Atlanta.

Monsanto Chemical Co., St. Louis, Mo., has listed 151 construction and expansion projects involving an estimated $48,400,000 for consideration as a part of its postwar program. Francis J. Curtis, vice president in charge of long range planning, has indicated that the company has examined the market potential of its newly-developed products, as well as of its present line of chemicals and plastics, and come to the conclusion that such an expenditure could be justified if certain conditioning factors, such as taxes, labor, etc., develop favorably. Monsanto's Plastics Division, Springfield, Mass., has formed an application advisory group to assist manufacturers in using plastics. Known as the Plastics Technical Council, the group of 10 engineers and chemists will work in close collaboration with the research and engineering departments of the company, and will formulate recommendations for presentation to inquiring manufacturers. Monsanto has appointed S. U. Shorey as assistant manager of plasticizers and resins sales, and B. B. Langton, as assistant manager of intermediates sales, both under the



Tenters

Butterworth Tenters—Straight Automatic, Vibratory, Mercerizing, Return. All new high-speed types. Straight Automatic Tenter is designed for speeds up to 200 yards per minute. All lengths and widths in all types of Tenters.

H. W. BUTTERWORTH & SONS CO.,
Serving the Textile Industry since 1820.
Main Office and Works, Philadelphia 25, Penna.

Butterworth

INDISPENSABLE

FOR

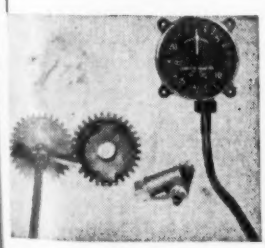
CONTROLLING

AND

INCREASING PRODUCTION

Every textile plant can benefit through the use of Jones Tachometers. Used for checking RPM; provides instantaneous and continuous check on operating speeds of rollers, shafts and other rotating parts; indicates shaft RPM, feet per minute, total output and other essential production information. Allows machines to run at peak productive rate safely. Speed changeovers to different types of production.

Jones Portable Hand Tachometers are continuous indicating, centrifugal movement, with guaranteed calibration. Lightweight, heavy-duty. Multi-range tachometer complete with 4" extension rod, convex and concave rubber tips, 12" circ. peripheral disc, centerpunch and carrying case . . . $60 FOB Stamford, Conn. Single range portables available in wide variety of ranges. Write for specifications.

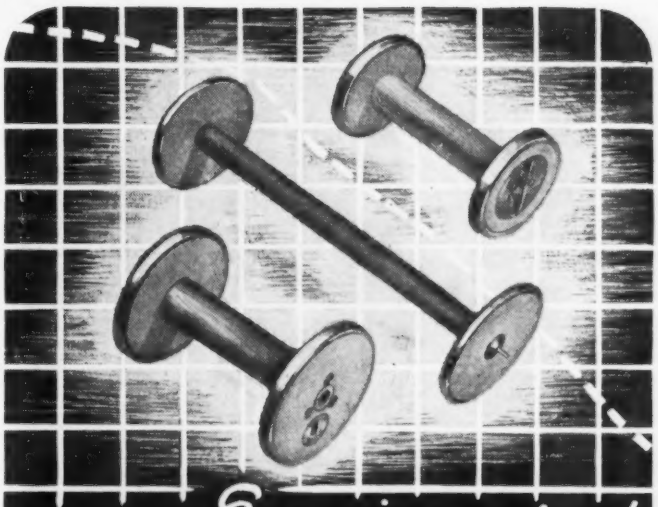


JONES FIXED TEXTILE TACHOMETERS

Jones Fixed Textile Tachometers for permanent installations are continuous indicating over full-scale uniform 360° dial. Heavy duty, wide variety of ranges, and special dial indications. Specifications and prices upon request.

JONES MOTROLA

437 Fairfield Ave., Stamford, Conn.



Engineered To Lower Your Costs

Bulldog Grip

STEEL TIRES

Steel tires protect the heads of Hubbard wood textile spools against splitting and entrance of moisture. Real economies in spool costs result. The patented steel tire is die formed under 70 tons pressure to become a permanent part of the plywood head. This ample guard against wear and abuse means longer spool life and low replacement cost.

Hubbard jack, carder, and twister spools are all supplied with the patented "Bulldog" grip steel tire. These types of spools are recommended for use with woolen and worsted yarns, rayon, rope, and cordage. All standard sizes are available. Write for bulletin and complete information.

Other Hubbard Textile Mill Products

Sectional Warp Beams
Strong, rigid, light weight magnesium alloy. Heads removable and interchangeable. Withstands even acetate yarn pressures.

Stainless Steel Spools and Bobbins
Guaranteed non-corroding and stainproof. Easily cleaned. Of perfectly balanced, electro welded construction.

High Speed Loom Beam and Warper Beam Heads
These balanced veneer plywood replacement beam heads are stronger, longer-lasting than other types.

HUBBARD SPOOL COMPANY
Since 1912, manufacturers of Spools, Reels and Related Products
1626 CARROLL AVENUE CHICAGO 12, ILLINOIS

quality dyes call for

SOLVAY
TRADE MARK REG. U.S. PAT. OFF.
SODIUM NITRITE

For the preparation of quality dyes, rely on the superiority of SOLVAY Sodium Nitrite. Produced in fine, free-flowing crystals of extremely high quality and purity, this U.S.P. Grade product is especially suited for the manufacture of azo dyes and for textile dyeing.

Specify SOLVAY Sodium Nitrite—and be sure of *quality*.

SOLVAY SALES CORPORATION

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BRANCH SALES OFFICES:

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Syracuse

company's Organic Chemicals Division.

Steel Heddle Mfg. Co., Philadelphia, has appointed John W. Elliott, managing director of the Steel Heddle Co. of Canada, Montreal, to be also the Canadian representative of the American company to handle the entire line of the company in addition to the reeds made by the Canadian branch.

Oscar Kohorn & Co., New York, has elected Dr. Joseph L. Costa as vice president. He was lately president of the Transparent Package Co., Chicago, and from 1926 to 1943 had been technical director and manager of the Woonsocket Rayon Co.

Apex Chemical Co., Inc., Elizabeth, N.J., has purchased all installations, equipment, and laboratores of the K & S Chemical Co., formerly of New York. This equipment has been installed in Elizabeth and the manufacture of organic synthetics on a commercial basis is now under way. Apex has added Arthur Regan and A. Seldner to the staff of its research laboratories.

Hercules Powder Co., Wilington, Del., will treble the production of its Mansfield, Mass. plant. The new facilities include a plant for the production of alkyd resins. The synthetics department plant has appointed R. H. Champion as assistant superintendent. Hercules will erect a $1,250,000 addition to its naval stores plant at Brunswick, Ga.

Pittsburgh Plate Glass Co., Columbia Chemical Division, Pittsburgh, Pa., has appointed R. M. Simpson as sales representative for the Chicago terriority, with office at 1721 Tribune Tower Building.

Sherwin-Williams Co., Cleveland, Ohio, plans a plant in Atlanta, Ga., to cost $2,000,000.

Nuodex Products Co., Inc., Elizabeth, N.J., has appointed Edward Salas as manager of its newly-formed Market Development Division. Mr. Salas formerly handled sales promotion for the Keystone Varnish Co., Brooklyn, N.Y.

Reynolds Metals Co., Louisville, Ky., has appointed H. V. Menking as manager of textile sales for the Aluminum Division. A native of Brad, Hungary, Mr. Menking was a sales development engineer with the American Magnesium Corp. from 1932 until he joined Reynolds. His headquarters will be at the Reynolds Metals Co.'s New York office, 19 East 47th St. Reynolds Metals has completed financial set-up and the official personnel of its new Mexican subsidiary, Reynolds Internacional de Mexico, S.A. This new Reynolds company will build an aluminum plant on a site already purchased on the outskirts of Mexico City.

WILLIAM C. VAN CLEAF, who has been appointed director of industrial relations for the Allis-Chalmers Mfg. Co., Milwaukee, Wis. He had served as assistant to Lee H. Hill, formerly a vice-president and head of industrial relations, who resigned recently to become publisher of "Electrical World" and "Electrical Contracting" of the McGraw-Hill Publishing Co.

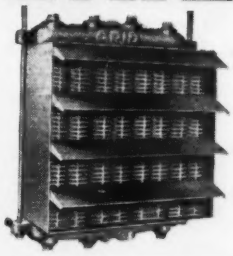
Bailey Meter Co., Cleveland, Ohio, has appointed W. E. Dueringer as assistant sales manager and H. E. Weaver as proposition department manager. Both men have been associated with Bailey Meter for over 25 years in various engineering and sales capacities.

Roxalin Flexible Finishes, Inc., Elizabeth, N.J., have appointed Robert Collyer as advertising manager. He has lately been advertising manager for the Calco Chemical Division and the Textile Resin Department of American Cyanamid Co.

American Tariff League, New York, N.Y., has elected H. Wickliffe Rose, assistant to the president of the American Viscose Corp., to succeed

ATMOSPHERIC CONDITIONS *LIKE THIS* DO NOT RETARD *OR* PLUG UP

GRID

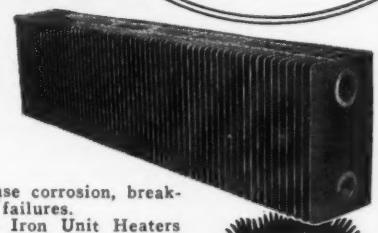


HERE'S WHY UNIT HEATERS

* One piece construction heating sections (patented) of high test cast iron that withstand steam pressures up to 250 lbs.

* No soldered, brazed, welded or expanded connections to become loose or develop leaks.

* No electrolysis to cause corrosion, breakdowns, leaks, or heating failures.



GRID High Test Cast Iron Unit Heaters are engineered especially to overcome atmospheric conditions always present in textile mills. Many have been in use for 15 years without maintenance expense. Capacity tables and complete details upon request.

SEND! for new booklet that tells why corrosion destroys unit heaters—free upon request.

HIGH TEST *Cast Iron* HEATING SECTIONS

D. J. MURRAY MANUFACTURING CO. WAUSAU, WISCONSIN

ONE MINUTE TALKS ON

LOW-COST, QUICK WAY TO CLEAN FLOORS!

Washing spinning-room floors manually or by power-driven scrubbing machines . . . either way you'll get cleaner floors in less time when you use that quick-acting, grease-dissolving detergent, Oakite Penetrant, in your washing solution make-up.

Leading mills are finding this specialized material today's successful answer to safer, more economical floor washing. They have found, too, that Oakite Penetrant, because of its remarkable free-rinsing qualities, leaves floors quick-drying, film-free . . . non-slippery!

FREE DIGEST describes this and 65 other important mill maintenance and related jobs. Send for YOUR copy TODAY!

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Technical Service Representatives Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* CLEANING

MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

IT ISN'T HOW FAST YOU SAW—

IT'S HOW STEADY

• No wood shed ever was filled by a fast saw. Impatient sawyers tire . . . they rest . . . like the hare that lost the race to the tortoise.

Card production isn't a question of speed either . . . the quality of your stock controls that. Card production depends upon time . . . keeping at it steadily, uninterruptedly, consistently.

Wissco Card and Napper Clothing will stay on the job longer. It will spread your re-grinding periods and turn out more production between shut-downs.

Its clean-cut staples, made of special steel, are precision set, precision ground and hardened. Wissco foundations are strong. They will retain their initial tension longer and hold the staples more firmly.

For detailed literature write Card Clothing General Sales Office, Wickwire Spencer Steel Co., Sterling Street, Clinton, Mass.

Wissco

CARD AND NAPPER CLOTHING

for wool, worsted, cotton, asbestos and specialties

WICKWIRE SPENCER STEEL COMPANY

Executive Offices—500 Fifth Avenue, New York City

Branches in Boston, Buffalo, Chicago, Detroit, San Francisco

Your Fabrics Get a GREAT, BIG "HAND"

WHEN YOU DESIZE WITH EXSIZE!

PROPER finishing demands a soft elastic feel in fabrics, uniform absorbency—a good "hand"—With EXSIZE, the natural enzyme desizer, your fabrics achieve this quality.

Moreover, EXSIZE works quickly, gently, cannot harm even the most delicate materials. It is a concentrate of pure malt enzymes, with no trace of harsh alkalis, acids or destructive chemicals. EXSIZE is economical, too—a few cents' worth will thoroughly desize hundreds of yards of cotton or cotton-mixed goods.

Learn the many advantages of EXSIZE right in your own mill with the help of a trained Pabst field man, or feel free to use our scientific laboratories for your tests. There is no obligation. Write for free booklet.

PABST BREWERIES

Copr 1945. Pabst Brewing Company, Milwaukee, Wisc.

PABST SALES COMPANY
CHICAGO, ILLINOIS
Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

NEWS ABOUT SUPPLIERS

Frederick K. Barbour, president, Linen Thread Co., New York, as president of the league. Mr. Barbour becomes chairman of the league's executive committee.

Visual Training Corp., Detroit, has adopted a new name, Florez, Inc. Genaro A. Florez, founder of the Visual Training Corp., continues as president and chairman of the board of directors. Other directors are Elmer E. Sylvester and R. M. W. Shaw, vice-presidents; C. W. Hinz, secretary and treasurer; and Herbert S. Gardner, Sr., president of the Birmingham National Bank. Arthur G. Rippey, manager of the company's Denver office, continues as a vice-president. Florez, Inc. serves a number of national organizations and occupies a seven-floor building at 815 Bates St., Detroit.

James Talcott, Inc., New York, has added S. R. Bushnell, who has specialized in industrial financing, to its staff.

Enco Chemical Co., New York, has elected Frederick A. Neuberg as president. Mr. Neuberg had previously been associated with Westvaco Chlorine Products Corp. in various sales executive activities for over 25 years.

International Nickel Co., Inc., New York.—H. J. French has resigned as assistant director for Raw Materials & Facilities of the Steel Division, WPB, Washington, D.C., to resume his duties as assistant manager of the Development & Research Division of International Nickel. He joined WPB in February, 1942.

Fairbanks, Morse & Co., Chicago, Ill., have appointed Lewis A. (Lew) Harlow as manager of their advertising division. He joined Fairbanks-Morse as assistant advertising manager in 1943.

Kuhn, Leob & Co., New York, N.Y., plans the creation of an electrical manufacturing industry in Mexico with the cooperation of American investors and Westinghouse technical assistance. A new company, Industria Electrica de Mexico, has been formed which will be the largest privately-owned industrial corporation in Mexico.

American Gas Association, Industrial & Commercial Gas Section, New York 17, N.Y., has appointed Arthur Q. Smith as publicity director. Mahon A. Combs has been named secretary of the Industrial & Commercial Gas Section.

R. L. "MIKE" CAIN, who has been appointed assistant sales manager of the Pennsylvania Salt Mfg. Co., Philadelphia, Pa. He joined the company in 1942, as assistant to the director of sales.

Philco Corp., Storage Battery Division, Trenton, N.J., has appointed Charles F. Greene as its Atlanta, Ga., representative.

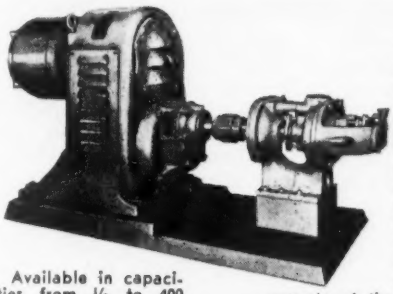
New York, New Haven & Hartford Railroad Co., New York, N.Y., has appointed James M. Graham as industrial agent, with headquarters in New York. He will be in charge of the New York office of the recently organized Department of Industrial Development created by the railroad to conduct an intensive campaign to assist present industries and to attract new industries to the territory it serves.

Kelco Co., San Diego, Calif., will erect an addition to its plant the foot of Sampson St. at a cost of $350,000. The company manufactures from seaweed and kelp certain chemicals used in the manufacture of textiles, paint, and other products.

BUMP PUMPS

WILL DO YOUR PUMPING JOB Better

here's why



Available in capacities from ½ to 400 GPM and in different models and metals suitable to the job. Illustrated here is the industrial direct drive model. Complete new catalog upon request.

Bump Industrial Pumps will handle light or viscous liquids with positive displacement at any speed or pressure. They are self-priming under high vacuums or against head pressures, and can be operated at slow speeds without agitation, churning, or vibration within the pump. Bump Industrial Pumps deliver a constant volume per revolution regardless of speed or pressure, and because of their special design, operate at the lowest maintenance cost. As one company that has used a large number of Bump Pumps for years states, "They do a better job at a lower total cost to us than any other pump now offered on the market." Note principle of operation above and you'll see why the low maintenance cost.

The BUMP PUMP CO. LA CROSSE WISCONSIN

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McGraw-Hill Industrial Mailing Lists are a direct route to today's purchase-controlling executives and technicians in practically every major industry.

These names are of particular value now when most manufacturers are experiencing constantly increasing difficulty in maintaining their own lists.

Probably no other organization is as well equipped as McGraw-Hill to solve the complicated problem of list maintenance during this period of unparalleled changes in industrial personnel. These lists are compiled from exclusive sources, based on hundreds of thousands of mail questionnaires and the reports of a nation-wide field staff, and are maintained on a twenty-four hour basis.

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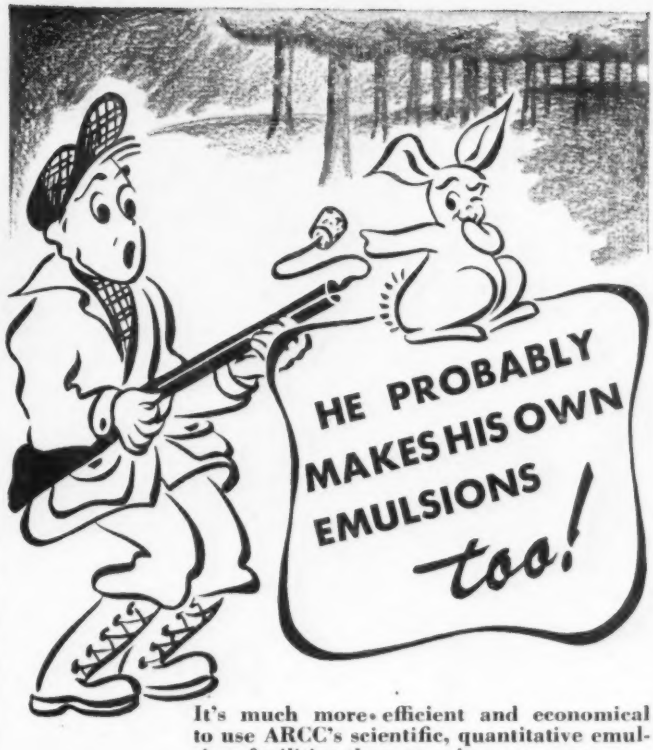

It's much more efficient and economical to use ARCC's scientific, quantitative emulsion facilities than to mix your own.

THE *WHY* OF RESIN EMULSIONS IN TEXTILE FINISHING AND CONVERTING

Compounding possibilities are myriad; this flexibility in economical custom composition assures precisely the wanted results in textile finishing.

Applications are myriad, too: characteristics of Filling — Adhesion — Rubberizing — Fireproofing — Waterproofing — Greaseproofing — Wrinkleproofing — Permanent Sizing — Combining and Laminating — Improved Tear Resistance — may be obtained with resin emulsions.

***Specifically* ARCC EMULSIONS**

Distinguished by stability, uniformity, controlled viscosity, quantitative availability and low cost.

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DIVISION OF TEXTILE CHEMICALS

American Resinous Chemicals Corp.

HOME OFFICES AND LABORATORIES: PEABODY, MASS.

NEWARK, N. J. CHICAGO, ILL. MONROVIA, CALIF.

Setol
IN YOUR SCRUBBER..

Gives You
Cleaning Action
WITH EVERY TURN OF THE BRUSHES!

Machine-scrubbing calls for *cleansers of action!* — especially if you want to keep down the operating time of your machine and save on labor. *Setol,* the mineral oil solvent expressly designed to work in scrubbing machines used on mill floors, acts *instantaneously* in emulsifying grimy oil and grease, enabling your machine to remove the accumulation in minimum operating time. And *Setol* is otherwise an economy—requires but one pound in ten gallons of water. There are *six* cleaning compounds in the *Finnell* line, each specially compounded for machine-scrubbing. In addition to *Setol,* there's *Finola Scouring Powder,* for heavy duty scrubbing of hard surface floors and some wood floors . . . *Solar Soap Powder,* for use wherever a good *soap* powder is required . . . *Finnell Rubber Cleaner . . . Century Scouring Powder,* a mild abrasive cleanser . . . *Asesco Solvent Cleanser* and Water Softener. All are compounded in *Finnell's own powder mill.* Containers range from 5-lb. bags to 300-lb. barrels.

IF YOU NEED NEW SCRUBBING EQUIPMENT . . . investigate the advantages of a Job-Fitted Finnell.

For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1910 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

NEWS ABOUT Mills

Cotton Mill News

American Thread Co., New York, has purchased three mills of Hampton Spinning Co. in the South and its entire yarn-mill division at East Hampton, Mass., and will take possession of these mills Nov. 3. The southern mills include two units at Clover, S. C., and one at Troutman, N. C. The Clarkville, Ga., branch, of the company has also purchased 100 acres on the outskirts of the city to be used for construction of a textile finishing plant, as soon as building materials are available.

Bibb Mfg. Co., Osprey unit, Porterdale, Ga., has completed installation of three new automatic spoolers and three high-speed slashers. Other equipment which has been added to the mill includes automatic monitor cleaners and a humidification system in the spinning department.

Britton Corp., Charlotte, N. C., is a newly organized concern, with an authorized capital stock of $100,000. O. C. Britton is president of the corporation; R. S. Dickson is vice-president, and W. H. Barnhardt is secretary and treasurer. The company will buy, sell, and process cotton, cotton waste, rayon, rayon waste, and other textiles and will possibly expand its activities in coming months, to include manufacturing and converting.

Carufel Braid & Webbing Co. has been organized as a branch of Blackstone Winding & Rug Co., Pawtucket, R. I., to manufacture flat and tubular braids, cords, laces, ric-rac, and tapes.

Exeter Mfg. Co., Exeter, N. H., has been making extensive improvements and renovations, including elimination of the spillway and water wheels to provide more floor space for the bleachery. Air-conditioning has been installed in the spinning and weaving departments.

Glendale Spinning Mills, Ltd., Hamilton, Ont., recently awarded contract for the construction of a one-story plant addition at an estimated cost of $257,274. The building will measure 182x58 ft.

Marshall Field & Co., Fieldale, Va., is planning an expenditure of more than $1,000,000 during 1946, and an additional $3,000,000 in the several years following for capital improvements in machinery, equipment, and buildings, for their textile products.

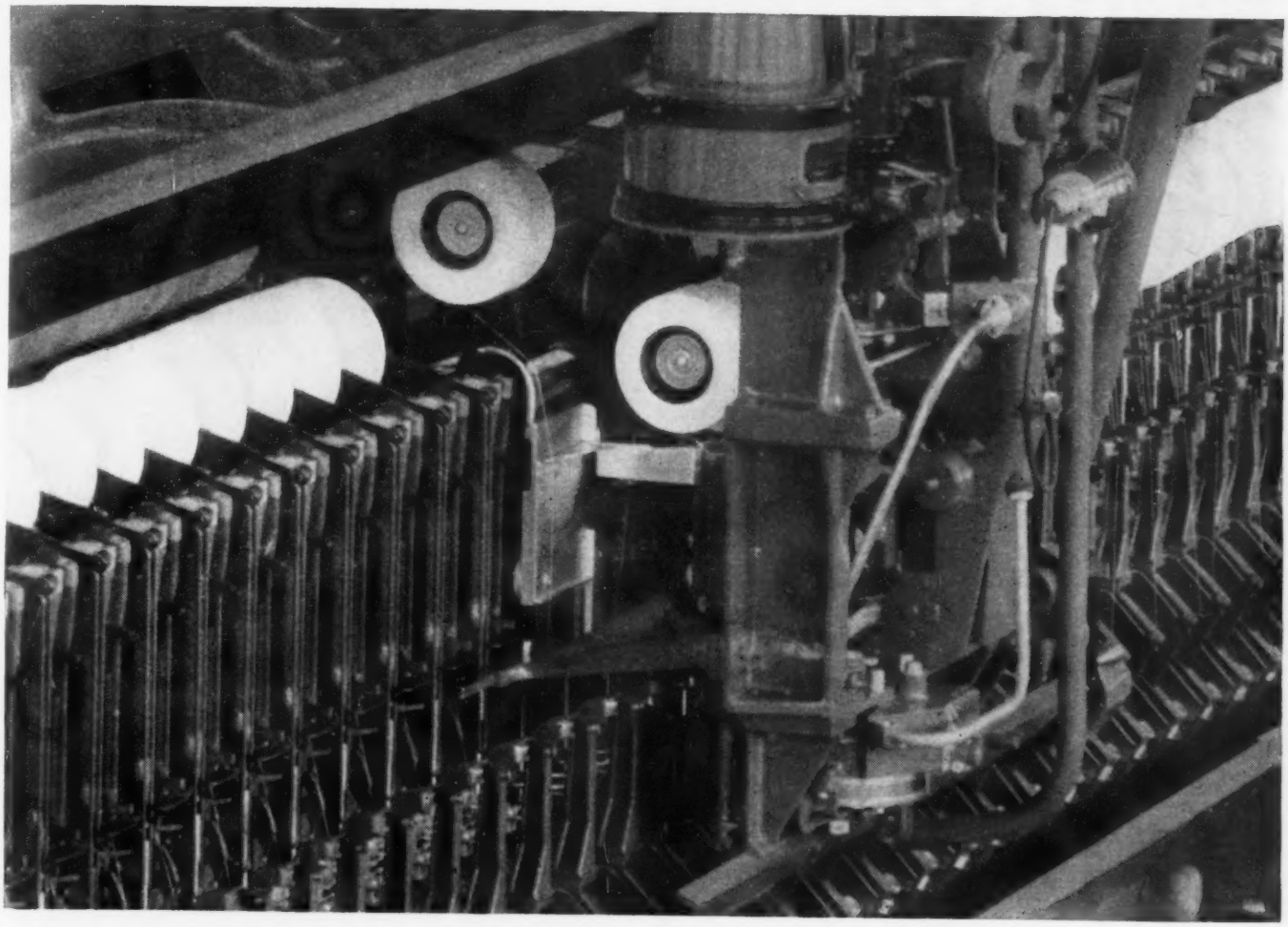
Joanna Textile Mills Co., Goldville, S. C., has begun an expansion program which will represent a cost of $1,500,000. W. H. Regnery, of Chicago, Ill., head of the Joanna interests, has given full approval of a four-story addition to the unit of the company at Goldville, representing space of 100,000 sq. ft. Approval has also been given for replacing worn machinery with the latest model new machinery and equipment. Fifty dwellings are to be built for operatives, together with a modern apartment house of 12 sections, steam-heated and with all the latest conveniences. Lockwood, Greene & Co., Spartanburg, S. C., and Willis Irwin, Augusta, Ga., are the engineers and architects.

Mt. Vernon-Woodberry Mills, Inc., Baltimore, Md., are making a survey of their materials-handling methods in their mills at Baltimore, Md.; Columbia, S. C.; and Tallassee, Ala., with the objective of installing mechanical equipment. P. O. M. Co., New York, in collaboration with Werner Textile Consultants, Inc., are consultants.

Muscogee Mfg. Co., Columbus, Ga., will award erection contract soon for five-story addition, 56x108 ft., to cost about $150,000, with equipment.

Neisler Mills, Inc., Kings Mountain, N. C., have begun construction of an addition to the Margrace unit which should be ready for occupancy by Nov. 15. It will add several thousand feet of floor space.

BARBER-COLMAN AUTOMATIC SPOOLER



THIS machine delivers a better package to the warper, resulting in better beams to the slashers, better loom beams to the weave shed, and better cloth to the finishers. This means less warper stops, more efficient slashing, fewer loom stops, and less seconds — all valuable advantages in the coming competitive market. Barber-Colman equipment has proved its ability to increase production and lower costs; experience has shown that it gives very little trouble, requires few repairs and very few service calls, and delivers a uniform package steadily with a minimum of down time. *Ask your Barber-Colman Representative for complete information.*

..THIS MACHINE IMPROVES THE QUALITY OF EVERY FOLLOWING STEP IN CLOTH PRODUCTION

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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SYNTHETIC DETERGENT

FOR WETTING FOR BLEACHING
FOR SCOURING FOR DYEING

A low cost synthetic organic compound of exceptionally high detergent value. Effective in hard water, acid, or alkaline baths.

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For Maintained Shrinkage—
Perfect Finish—Long Life

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Huyck Sanforizer blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

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KENWOOD MILLS
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NEWS ABOUT MILLS

Opelika Mills, Opelika, Ala., have awarded contract to Batson-Cook Co., West Point, Ga., for construction of a building, 75x80 ft., two stories, to be completed by the last of November. Robert & Co., Atlanta, Ga., is the engineering firm. New textile machinery will be installed. The company has had work under way for some time on a two-story building, brick and steel, 176x 248 ft. to be completed about the last of October. The estimated cost is $1,000,000.

Pacific Mills, Boston, Mass., have acquired the common stock of Rhodiss Cotton Mills, Rhodiss, N. C., a plant containing 188 broad looms, 630 automatic looms, and 31,000 spindles.

Pacolet Mfg. Co., Pacolet, S. C., is carrying out a $16,000 improvement program at the mill, including a water filtration plant with a capacity of 400,000 gal. a day, modernization and alterations in the mill office with a carrier air-conditioning system, and extensive work in re-motorizing mill machinery. Lockwood-Greene Engineers, Inc., are the designers.

Pearl Mill, Boiling Springs, N. C., established and operated by R. J. Woods, of Shelby, N. C., and Kings Mountain, N. C., has been sold for $75,000 to Jack and Davide Sobel, of New York, who will operate the mill under the name of Barbara Mills Inc. They will produce yarns to be used in the manufacture of knitted garments.

Pepperell Mfg. Co., Opelika Div., Opelika, Ala., has begun erection of 2 two-story additions, 176x248 ft., and 75x80 ft., for extensions in cotton mill, bleachery, and finishing plant. General contract let to Batson-Cook Co., West Point, Ga. Cost about $1,000,000, with equipment.

Pomona Cotton Mill, Greensboro, N. C., is spending more than $100,000 in an improvement program. New toilet facilities are being installed throughout the mill village, a modern first aid and medical department and other welfare facilities have been set up; the opening aind picking department has been revamped and new machinery installed; a new humidifying system is being installed throughout the plant, and renovation is under way in the finishing and dye departments.

Standard Cotton Products Co., Flint, Mich., has begun expansion and improvement program, including new one-story addition, for which erection contract will be awarded soon. Cost about $300,000, with equipment.

Susquehanna Co., New York, has purchased Ensign Cotton Mill, Forsyth, Ga., The 12,000 spindle mill will be known as Susco Mill Corp.

Wool Mill News

Aldon Yarns, Inc., Woonsocket, R. I., recently chartered with capital of 500 shares of stock, plan operation of local mill. John R. Higgins, 86 Woodland Rd., Woonsocket, is principal incorporator.

Atlanta Woolen Mills, Atlanta, Ga., have superstructure under way on two-story addition, about 30,000 sq. ft. floor space, for expansion in dye house, blending division, and certain processing operations.

Belleville Woolen Co., North Kingston, R. I., has started construction on a 40-ft. addition to the finishing department for inspection and burling.

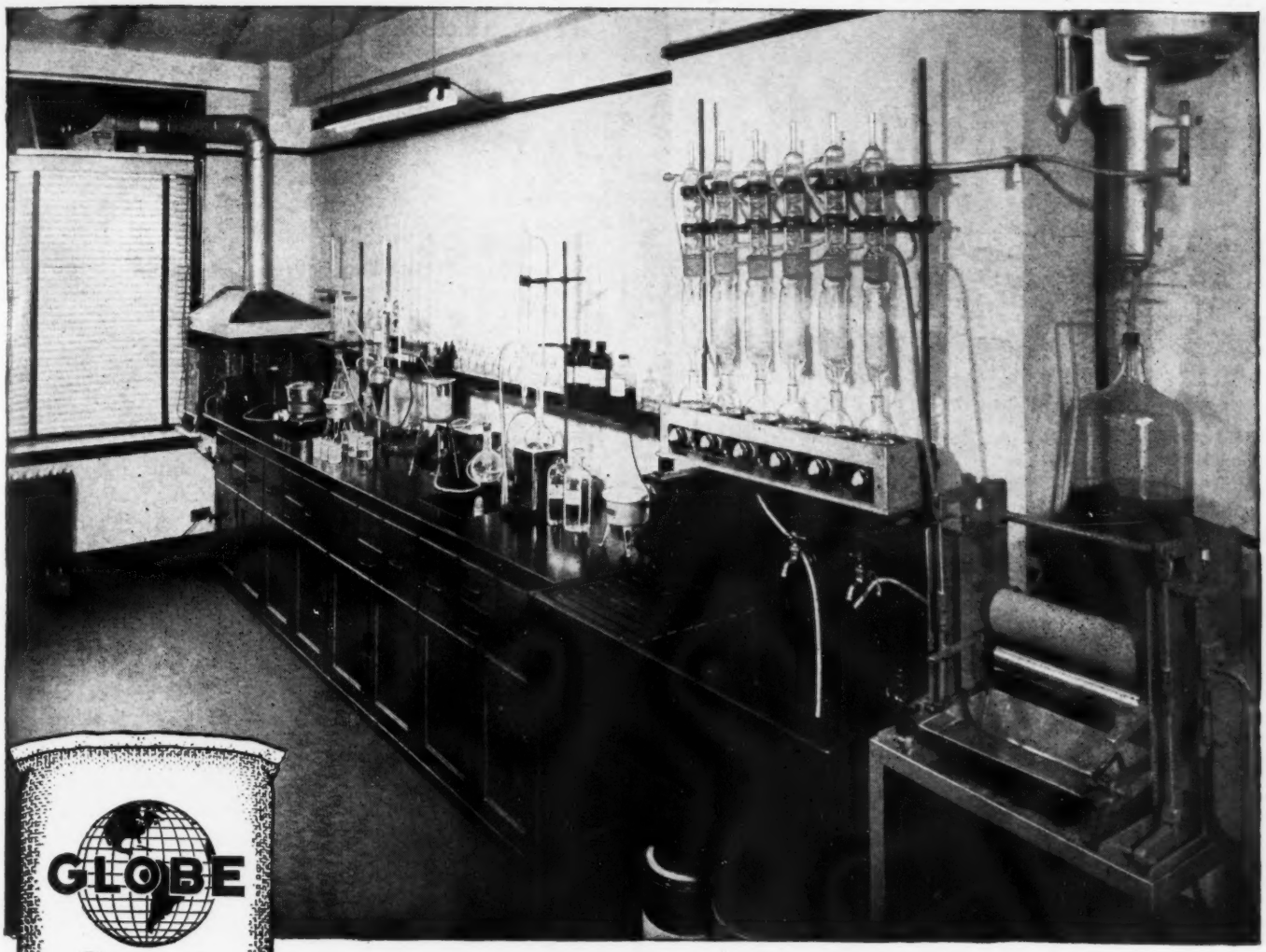
Brampton Woolen Mill plant in Sunapee, N. H., has been purchased by Connecticut River Mills, Inc., New York. It is reported that the new owners, who also operate Connecticut River Mills, Charlestown, N. H., will manufacture woolen materials. Brampton will continue to operate its Newport, N. H., plant.

Burlington Mills, Burlington, Wis., have asked bids for one-story addition, 66x105 ft., and will award contract soon. Eschweiler & Eschweiler, Milwaukee, Wis., are architects.

Chatham Mfg. Co., Elkin, N. C., has authorized plans for expansion, including several new mill buildings and installation of equipment for large increased capacity. Cost about $1,000,000.

Golden Fleece Woolen Mills, Ltd., Magrath, Ala., will construct a one-story addition.

Hartford Spinning Co., Unionville, Conn., has exten-



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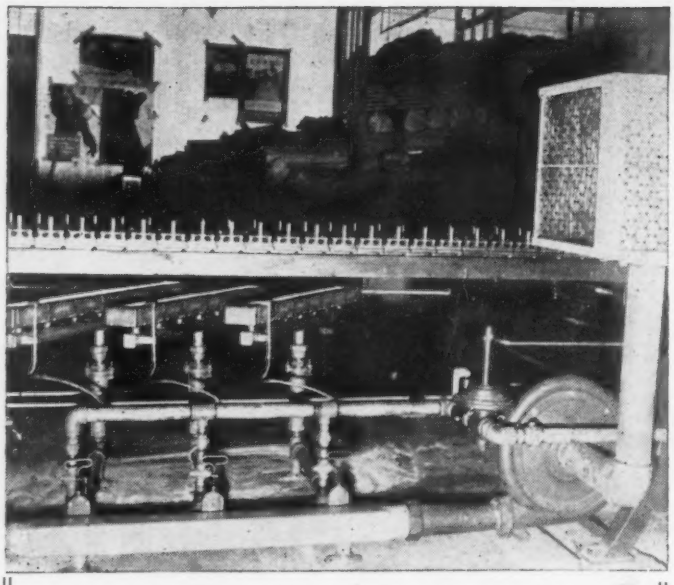

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HANDLING COTTON GOODS
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Canadian Representative:
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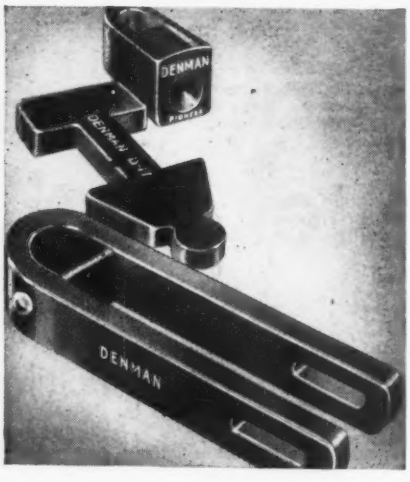

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Lowest Cost Per Loom Per Year

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E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

sive plans for the post-war period, including construction of a spinning plant adjacent to the present building.

Hopkinton Woolen Co., Hope Valley, R. I., has been organized by Karl Meyers and is now producing knitting yarns. The mill occupied was formerly run by Furmax Woolen Co. Norwich, Conn.

Lees-Cochrane Corp., Glasgow, Va., has plans maturing for new multistory addition, reported to cost over $400,000, with equipment.

Livingston Worsted Mills, Inc., Holyoke, Mass., have work in progress on one-story dye house addition.

Mystic Rug & Novelty Co., 436 Main St., Wakefield, Mass., will let contract soon for one-story addition, 65x110 ft., to cost close to $45,000, with equipment. C. F. Springall, Malden, Mass., is architect.

New Braunfels, Tex. — A new plant for the manufacture of wool and mohair will be established in New Braunfels, by Helmar Doehne & Associates.

Pacific Mills, Boston, Mass., have awarded contract for a new worsted mill at Halifax, Va., to C. M. Guest & Sons, Greensboro, N. C. J. E. Sirrine & Co., Greenville, is the engineering firm for the new company which is expected to employ between 400 and 500 persons.

Thomas Woolen Mills, Inc., Fabyan, Conn., recently organized with capital of $10,000, plan operation of local mill. Louis and George J. Thomas, Fabyan, are secretary and assistant treasurer, respectively.

Warwick Woolen Mills, Ltd., Warwick, Que., is reconstructing and enlarging its existing mill building at a cost of approximately $70,000. The work includes construction of a concrete reservoir for storage of 100,000 gal. of water.

Rayon Mill News

American Viscose Corp., New York, has completed plans for an expansion program that will increase its rayon production by approximately 100,000,000 lb. a year. The main part of the program will be construction of a new plant at Radford, Va., which will produce approximately 55,000,000 lb. a year of viscose rayon staple. The remainder of the increased production will be obtained by enlarging the company's acetate rayon plant at Meadville, Pa., and its viscose rayon staple plant at Nitro, W. Va. Total current production of the company's seven plants is at the rate of about 260,000,000 lb.

M. E. Binz Co. Ltd., are erecting a new plant at Montmagny, Quebec, to spin and weave spun rayon and spun-rayon blends. When completed early this fall, this plant will increase Binz's total production by about 65%.

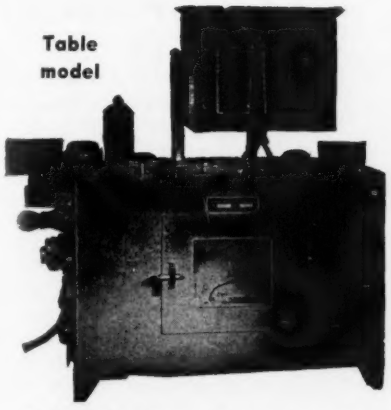
Burlington Mills Corp., Greensboro, N. C., plans expansion and improvement program at Blue Ridge Rayon Mills, Altavista, Va., comprising additional buildings and equipment installation, to be carried out over period of about 48 months at a cost of over $1,500,000. The company has also purchased Stark Bros. Ribbon Corp., General Ribbon Mills, Inc., Stark Bros. Ribbon Corp. Ltd. of Canada, and other Stark companies. M. T. and J. W. Stark will continue in full charge of the companies. Burlington has also purchased the plant of the South Boston Weaving Corp., South Boston, Va.

Cheney Bros., Manchester, Conn., will start construction of the first single-story building of its finishing plant shortly in connection with its modernization and expansion program.

Cia Nitro-Chimica, Sao Miguel (near Sao Paulo), Brazil, manufacturers of rayon by the nitro-cellulose process, have bought a complete new plant (viscose process) from the Kohorn Co., New York, at a cost said to be in the neighborhood of 280,000 contos (about $14,000,000 of which about half represents sub-contracts going to about 30 other U. S. firms). This is probably the biggest single order for mill equipment ever placed by a Brazilian mill. The Matarazzos interests which operate a plant using the viscose process and control industries in Sao Paulo, were also in the market for a similar plant.

Fabric Originals of California is the name of a new corporation in Los Angeles,

Textile Testing Ovens



Eight-Basket Oven—Can be equipped with 8 Baskets—3" x 3" square, and 6" deep; or with 6 Baskets, 4¼" x 4¼" and 6" deep. Sets on table in space of 20" x 40".

Check Yarn Samples for Moisture

Test all your yarn, stock in process, and finished goods—for moisture content — with accuracy. Weighing can be made without opening the oven door.

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Equipped with baskets to fit the work. Write for details on EMERSON OVENS to fit your process.

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Worn rings are literally a drag on your spinning and twisting machinery. End this slow-down with new DIAMOND FINISH rings, and watch the tangible gain in pounds per shift. Our superbly polished DIAMOND FINISH assures smooth starting, long life.

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ALFRED W. CAVEDON

Spinners of Fine Woolen
Merino & Specialty Yarns

SELL DIRECT — TALCOTTVILLE, CONN.

DANA WARP MILLS

Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

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Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.

LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

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NEW BEDFORD, MASS.

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Calif., with 100 shares of capital stock. Directors are M. Cuenod, S. Ingber and F. Silver, all of Los Angeles. The new corporation is represented by Katz, Gallagher & Margolis, 111 West Seventh street, Los Angeles, Calif.

Drackett Co., Cincinnati, Ohio, is building plant at Sharonville, Ohio, for manufacture of protein fiber from soy beans.

Hartford Rayon Corp., Rocky Hill, Conn., has plans under way for new addition for increased capacity, including improvements in present mill. Buck & Buck, Hartford, Conn., are engineers.

Industrial Rayon Corp., Cleveland, Ohio, has plans under way for extensions and improvements in boiler plant at mill, with installation of two new 600-hp. boilers and auxiliary equipment. Cost about $360,000. McGeorge & Hargett, Cleveland, are engineers.

Laurentian Silk Mills, Ltd., Cap de la Madeleine, Que., have work under way on one-story addition, for which contract recently was let to Alphonse Devost, Montreal, Que. Cost is reported at $85,000, with equipment.

New Bedford Rayon Co., New Bedford, Mass., has awarded contract to Theodore Loranger & Son, New Bedford, for a new switch room.

Skenandoa Rayon Corp., Utica, N. Y., has work under way on expansion and improvements to cost about $850,000, with equipment.

Southern Winding Co., Gastonia, N. C., which specializes in custom winding and twisting, has moved to new and larger quarters.

Tennessee Eastman Corp. has completed plans for several additions to its plant in Kingsport, Tenn.

Textron, Inc., New York, N. Y., is negotiating for the purchase of Lonsdale Co., Providence, R. I., for $3,128,500, a price which represents a profit of more than a million dollars to the Rhode Island Foundation Trust, which now owns 99% of the stock of the Lonsdale Co. Royal Little, president of Textron, recently resigned his post as sole trustee of the trust.

Processing Plant News

Dominion Silk Dyeing & Finishing Co., Drummondville, Que., plans installation of additional equipment in wool dyeing division, including facilities for handling warp knit materials.

Duchess Dyeing Co., Paterson, N. J., has been organized by William Shenker and Dr. Fred Miller, both formerly with the Cambridge Piece Goods Dyeing Co. The capacity of the plant will be 70,000 to 80,000 yards daily.

Flocktex Corp., is being organized in Lawrence, Mass., by Agawam Dye Works, to make coated fabric for shoes.

Peerless Dyeing Co., Inc., Pawtucket, R. I., recently formed with capital of $150,000, plans early operation of local mill. James F. Armstrong, 84 Belvedere Blvd., North Providence, R. I., is principal incorporator.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., plans expansion and improvements in mills, with installation of equipment for increased capacity, at a cost of about $625,000.

Knitting Mill News

Asheboro Hosiery Mill, Asheboro, N. C., is going forward with its expansion program. New equipment will include 16, 30-section, 51-gauge, full-fashioned machines and 100 new seamless machines. Orders are in for 96 Comet machines for misses' hosiery.

B. C. Hosiery Mill, Newport, Tenn., is a newly organized plant which was put into operation early in September by B. C. Castile. The mill is manufacturing misses' hose and boys' sportswear hose. Additional machinery will be installed.

Celanese Corp. of America, New York, N. Y., will award contract soon for erection of warp-knit fabric mill at Bridgewater, Va., where site was acquired several months ago, previously reported, and project deferred for postwar development. Cost about $500,000, with machinery.

Cosmos Imperial Knitting

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Reg. U.S. Pat. Office

Has Excellent Fastness to Atmospheric Gases

Yes, acetate rayon dyed fabrics treated with double-action ARIPEL-FS are remarkably resistant to the fading action af atmospheric gases as proven by the "Gas Chamber" test.

ARIPEL-FS is also an effective softener and therefore works two ways in a one bath treatment —

- **Increases the gas-resistance of the color.**
- **Imparts a soft, smooth pleasing finish.**

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Tests flat, irregular and curved surfaced materials in 3 seconds or less

Here is the all-purpose moisture testing instrument you have been waiting for.

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The same exacting scientific research and precise engineering development that have made L-2 (lumber) and V-2 (veneer) models of Moisture Register the standard in their fields make the new model K-2 an accurate, dependable addition to this famous line. Write today for complete information, specifying type of material and per cent range of moisture content you wish to test.—Moisture Register Co., Dept. G, 133 North Garfield Avenue, Alhambra, California.

Direct reading dial shows moisture content of:
Paper in Stacks or Rolls
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Where Decay, Odor, Taste, or Acid Is A Problem, Use

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Romeyn Beck Hough, author of "American Woods", says of Cypress "Its great durability, immunity from the attacks of parasites, and non-liability to great shrinking or warping make it one of our most valuable woods for all woodwork exposed to weather, for tank construction, cooperage, etc. Its value . . . is enhanced by its comparative freedom from coloring or flavoring ingredients".

Phillips A. Hayward, author of the volume on Wood in Chandler Cyclopedia, says that Cypress is "easy to work, available in large dimensions, and resistant to decay". It is also "resistant to changes in moisture, resistant to acids, and imparts neither color nor taste."

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NEWS ABOUT MILLS

Mills, Hamilton, Ont., will construct two buildings, one 62x98 ft., and the other, 62x98 ft., at a cost of approximately $65,000.

Beaunit Mills, Inc., New York, N. Y., has bought the entire common stock holdings of the St. Regis Paper Co. in Skenandoa Rayon Corp., Utica, N. Y., and J. Rogosin of Beaunit has become president of Skenandoa.

Dothan, Ala.—C. M. Guest & Sons, Greensboro, N. C., has been awarded contract for the construction of a hosiery mill.

Doyle Hosiery Corp., Doylestown, Pa., has been sold to the M. H. Hosiery Co. Inc., a newly formed corporation.

House of Byer, Inc., Cambridge, Mass., has purchased a site near Lenoir, N. C., and will construct a mill costing about $50,000 on it for the manufacture of infants' and children's hosiery.

Hudson Hosiery Co., which operates two large mills in Charlotte, N. C., has leased 10,000 sq. ft. of space in Shelby, N. C., for the establishment of a new branch unit.

Jantzen Knitting Mills, Portland, Ore., have plans for one-story warehouse addition, 100x100 ft., and will soon award erection contract.

Lehman Mills, Martinsville, Va., recently organized and now operating a knitting mill, plan installation of additional knitting machines.

Lenoir, N. C.—Clark and Claud Teague have established a new hosiery mill and partial operations have begun.

Liberty Hosiery Co., Liberty, N. C., plans construction of a hosiery finishing plant at Siler City, N. C.

Marietta, Ga.—Marietta Industrial Association, has let contract to Herman Construction Co., Atlanta, Ga., for one-story building, 100x140 ft., at $72,522, to be occupied under lease by Marietta Hosiery Co., recently organized.

National Hosiery Mills, Inc., Indianapolis, Ind., plans one-story addition, 40x107 ft., for warehouse. Cost reported over $35,000, with equipment.

Plymouth Hosiery Mills, Inc., High Point, N. C., will construct a new plant in that city at a cost of $50,000. The Plymouth plant manufacturers misses' and infants' anklets, as well as men's half-hose.

Rohrer Knitting Mill, Orwigsburg, Pa.—Controlling interest in this company has been purchased by Carl Gutmann & Co., New York, N. Y., who will continue operations without change.

Rollins Hosiery Mills, Inc., Des Moines, Iowa—Controlling interest in this company has been acquired by Munsingwear, Inc., Minneapolis, Minn., which will be active in management in future. Rollins has arranged with interests at Rogers, Ark., for erection of local building to be occupied under long-term lease as branch knitting mill.

A. J. Stortz, Fort Atkinson, Wis., has plans for one-story knitting mill on Oak St., about 40x60 ft., for hosiery manufacture and will begin work soon.

Straus Knitting Mills, 352 Sibley St., St. Paul, Minn., will install considerable new machinery. Entire project estimated to cost $100,000.

Talbotton Knitting Co., Talbotton, Ga., newly organized, began production early in September for manufacture of bobby socks under the name of "Teen Tavern Socks." The concern is capitalized at $100,000.

Thompson Hosiery Mill, Burlington, N. C., owned by Joe Thompson of Burlington and Palmetto, Fla., and under lease to Clyde W. Gordon and W. C. Mull, has been sold to Webb Hosiery Co.

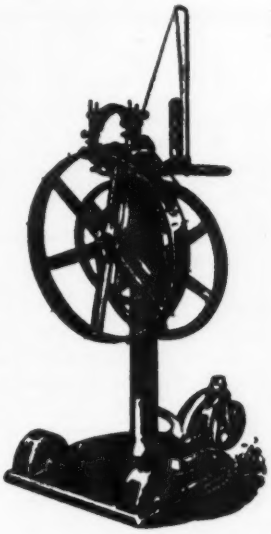
Victor Knitting Mills, Pasadena, Calif., are planning construction of a new brick building on East Colorado St. The structure will be 75 x 75 ft.

West Virginia Hosiery Corp. has been organized by Philadelphia interests to take over a hosiery mill at Eleanor, W. Va., constructed several years ago by the government as a homestead project and formerly operated as Redhouse Mfg. Co.

Renfro Hosiery Mills Co., Mount Airy, N. C., has sold the building housing its No. 2 plant to Granite Hosiery Mills, of the same place, and will erect a modern hosiery dyeing and finishing plant adjacent to the No. 1 plant.

A Jack-of-all-Sewing For Finishing

The Dinsmore No. 9 Portable Rotary Foot Power Sewing Machine is used for handling cloth, thick or thin, wet or dry. Easily shifted to any part of the mill. Positive-acting . . . all gears have machine cut teeth . . . our Improved "DN" Sewing Head is standard equipment. Rubber tire floor wheels. ***Write us.***



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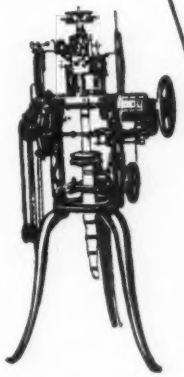
UP GOES PRODUCTION WITH BRINTON CIRCULAR KNITTING MACHINES DOWN COMES OVERHEAD



BRINTON Circular Knitting Machines keep quality high—increase production—lessen shut-downs—and reduce overhead. They keep on performing day after day—with a minimum of attention That's why you'll find Brinton's in the largest mills, where accurate and scientific records are kept to tabulate the performance of every unit. • We have been making Brinton's for over fifty years, and will be happy to figure with you on your immediate requirements.

Your inquiry will bring full particulars.

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DEVOE ALKYD-BASE **FLOOR & DECK ENAMEL**

Now that the war is over, Devoe Floor & Deck Enamel is again available with an alkyd-base—is again made from selected oils and sound synthetic resins that impart maximum durability. Devoe Floor & Deck Enamel is a general purpose enamel of pre-war quality *plus*, deriving new and important advances from Devoe's constant, war-inspired laboratory research and study. You'll find Devoe Floor & Deck Enamel ideal for use on interior and exterior floor surfaces of concrete, wood, canvas and linoleum; on machinery, interior metal surfaces, as a dado enamel in wall-painting work; in a wide variety of applications.

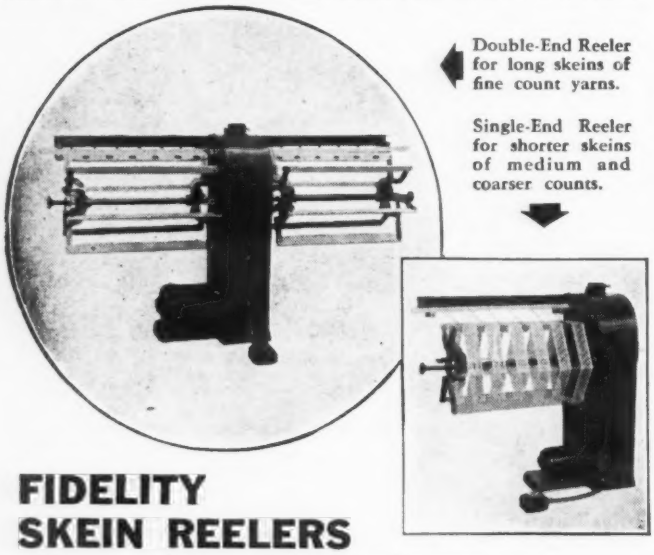
Outstanding advantages of DEVOE FLOOR & DECK ENAMEL

1. **ELASTIC:** Withstands expansion and contraction due to temperature changes.
2. **EASY BRUSHING:** Spreads evenly, easily . . . is self-leveling.
3. **WASHABLE:** Hard, glossy finish, is easy to wash.
4. **HIGH GLOSS:** Tile-like finish, is water and alkali resistant.
5. **QUICK DRYING:** Dust free finish.
6. **UNUSUAL OPACITY:** Exceptional hiding qualities.

Devoe offers a complete line of maintenance paints, and is prepared to help solve your maintenance paint problems. Write Devoe today.

OVER 191 YEARS **DEVOE PAINT**

787 FIRST AVENUE, NEW YORK 17, N. Y.



Double-End Reeler for long skeins of fine count yarns.

Single-End Reeler for shorter skeins of medium and coarser counts.

FIDELITY SKEIN REELERS

give you these 9 Advantages

1. All work at comfort level—no high lifting.
2. Less floor space—from 13% to 55% saving.
3. Less idle time per reel.
4. Less net doffing time.
5. Greater production in pounds of yarn per hour.
6. Generally shorter winding time through speed changes.
7. Fractional HP gear-head, brake-motor with foot-button release to leave operator's hands free.
8. Available to give straight or diamond "lay."
9. Easy, accurate control of skein weight and yardage.

Detailed information on request.

FIDELITY MACHINE COMPANY

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NEWS ABOUT *Men*

Charles A. Sweet has resigned as president, of Wellington Sears Co., Inc., and **Richard G. Conant** has been elected to that position. Mr. Conant has been director and vice president of the company.

Albert F. Garrou is the newly elected president of Valdese Mfg. Co., Valdese, N. C., succeeding the late C. A. Spencer.

Theodore B. Luse, who recently resigned as vice president and comptroller of Stonecutter Mills Corp., Spindale, N. C., has become associated with Roth Fabrics Corp.

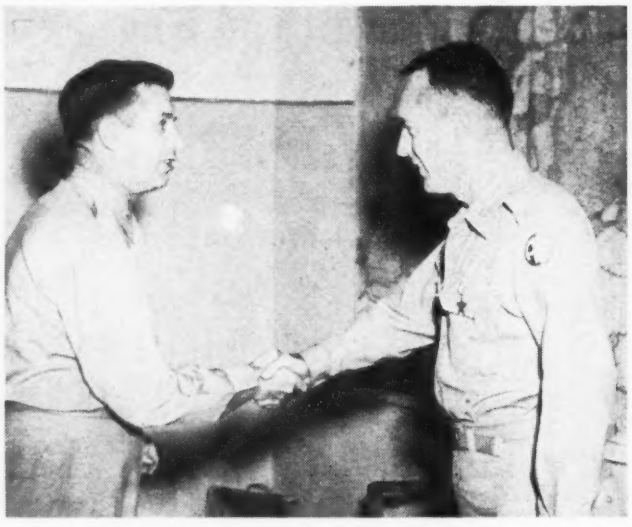
R. C. Jones, formerly manager of Tubize Rayon Corp., Rome, Ga., has taken up his new duties in New York as vice president of Tubize.

H. Wickliffe Rose, coordinator of research and planning of American Viscose Corp., Wilmington, Del., has been elected chairman of the board of governors of Philadelphia Textile Institute, succeeding **M. Earle Heard** of West Point Mfg. Co., who remains on the board.

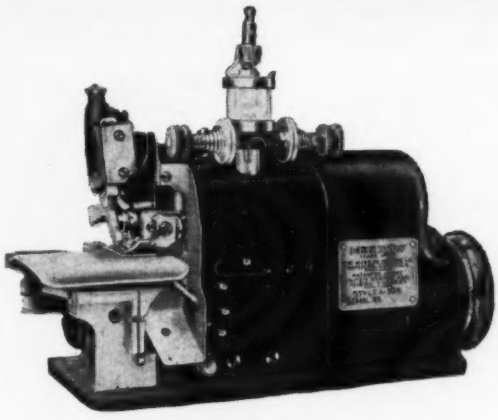
Edward P. McMullin, has retired from active service with John Hand & Sons Silk Mills, South Patterson, N. J. He has been associated with that concern since its organization 52 years ago.

A. B. Hammond has become vice president and general manager of Berryton Mills, Berryton, Ga., **Grady Moorhead,** superintendent, and **Oscar Dowdy,** assistant superintendent.

J. Mack Hatch, general manager and treasurer of Hatch



Maj. William G. Ashmore (right), who before entering active service in the Army was Southern editor of TEXTILE WORLD, was recently awarded the Bronze Star Medal for meritorious achievement as assistant, and later as chief, of the Control Branch, Quartermaster Section, Mediterranean Theater of Operations, U. S. Army. The citation reads in part: "Major Ashmore performed services of an invaluable character incident to the original development of a stock control system and depot inspection procedure, and later improved these procedures to a degree whereby they were used as a model throughout the theater. . . . As the Quartermaster representative, Major Ashmore assisted materially in the successful inauguration and implementation of work simplification procedures with Quartermaster Corps installations in the Mediterranean Theater." Major Ashmore saw combat at the Anzio Beachhead with Fifth Army Headquarters and participated in the invasion of Southern France with Seventh Army Headquarters. In addition to the Bronze Star, he wears the American Defense Ribbon and the Mediterranean Theater Ribbon with three battle participation stars.



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OVEREDGING, OVERSEAMING AND HEMMING MACHINES

For Use on Knitted and Woven Wear of All Kinds

Quality Results—High Production
Convenient Handling
Minimum Time-Out for Adjustment
or Repair—Low Upkeep Costs

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various Results and Proper Care and Operation of Machine.

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STARTING ITS SECOND CENTURY

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Acme Products

for seamless hosiery knitting

Speak for Themselves

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Needles

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KNITTING MACHINES

meet the needs for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is versatility . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just ***WRITE***

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LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY

Here's a method for duplicating documents, sketches, letters, quotations—anything on paper—which is not only accurate but speedy and inexpensive. Anyone can operate an Oroo photo copying machine without any techincal training.

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Write for new free catalog on complete line.

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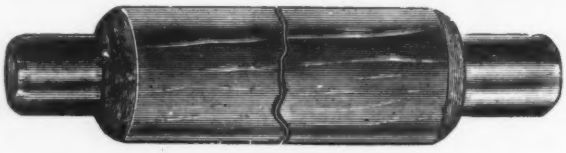


DYE STICKS

Since 1900 we have made high quality true-form over-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write

FRANK BAILEY Cedar Brook, N. J.

NOVELTY-YARNS
For
WEAVERS-KNITTERS

MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

NEWS ABOUT MEN

Full-Fashioned Hosiery Co., Belmont, N. C., has sold his interest in this concern and retired from its active management on Sept. 1, but will remain to serve in an advisory capacity.

Leonard A. Yerkes, general manager of the Rayon Department of E. I. du Pont de Nemours & Co. for 28 years, has retired. He played an important part in the development of cellophane, rayon, nylon, and other synthetic products. The company's Buffalo, N. Y., rayon plant, the pioneer Du Pont unit in this field, will hereafter be known as the Yerkes Plant in his honor. Mr. Yerkes is a graduate of the University of Pennsylvania class of 1902, and worked for Joseph Bancroft & Sons Co., Wilmington, Del., for 15 years before joining Du Pont in 1917. He is succeeded by **Benjamin M. May,** previously his assistant.

Fuller E. Callaway Jr., president of Callaway Mills, LaGrange, Ga., resigned Oct. 10 to devote his full time to the work of Callaway Community Foundation, Fuller E. Callaway Foundation, Hills & Dales Farm, and other outside interests. He is succeeded by **A. B. Edge, Jr.** There has been no sale of Callaway interests.

T. Lynwood Smith, Asheboro, N. C., has been elected a vice-president of Adams-Millis Corp., High Point, N. C., and placed in charge of personnel and public relations.

Russell C. Gebert, formerly secretary of Lees-Cochrane Co., Glasgow, Va., has been promoted to vice-president. **F. Edward Malmberg** has succeeded him as secretary of the company.

R. H. Sperling, manager of the Canadian Celanese Ltd. plant, Drummondville, Que., and a director of the company, has been named vice president. **R. O. Gilbert,** assistant secretary, has been elected secretary and **A. G. Allan,** assistant treasurer, has been elected treasurer.

Frank G. See, assistant secretary and office manager of Alexander Smith & Sons Carpet Co., Yonkers, N. Y., will retire at the end of the year, completing 54 years of service with the company. **Edwin Hennigar,** assistant office manager for 17 years and with the company for 29 years, will succeed Mr. See as office manager.

R. H. TUTTLE who has been appointed manager of Zion Lace Curtain Mill, Zion, Ill., succeeding Lee R. Fleming, who has resigned. A North Carolinian, he joined Marshall Field & Co. Mfg. Division in 1929, as a specialist in dyeing after graduation from Clemson College. In 1933, he was made superintendent of Karastan Rug Mills and in 1942 was named personnel manager of the ten Marshall Field & Co. mills in North Carolina and Virginia.

O. W. Hampton has joined Native Laces & Textiles, Inc., and will be in charge of all tricot fabric production. He recently resigned from Blue Ridge Textile Co., Bangor, Pa.

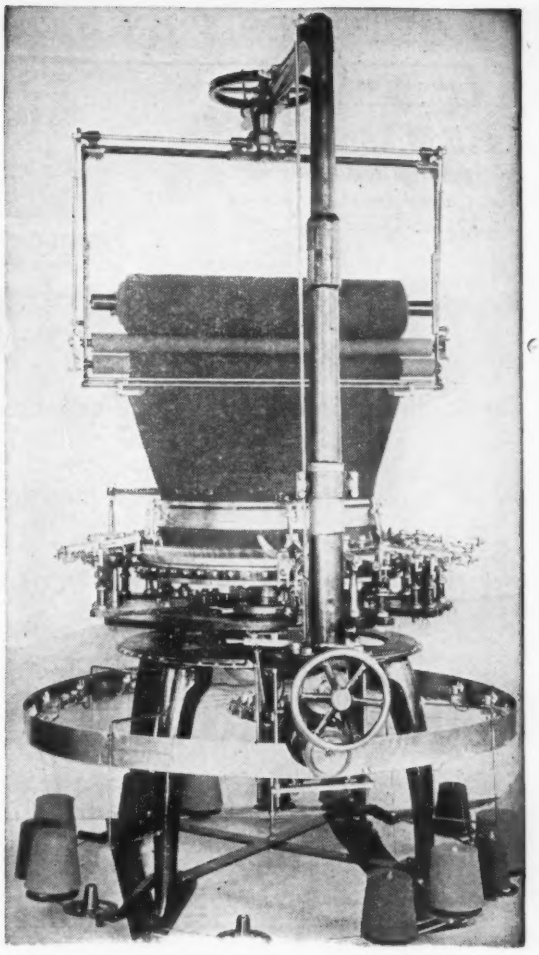
Vernon Zweck has been appointed manager of the cotton and rayon fabrics department of William Whitman Co., Inc., New York. **Walter H. Schrader** and **Bertram E. Schroeder** will continue their present activities in connection with the sale of gray goods.

Oliver P. Beckwith, who was loaned to the Army QM Corps, has now returned to the research and product engineering laboratories of Alexander Smith & Sons Carpet Co., Yonkers, N. Y.

Thomas R. Smith, manager of the yarn dyeing department of Wiscassett Mills Co., Albemarle, N. C., has gone to Germany as one of a group of experts from the textile field to study technical developments in the German textile industry.

Claude Frederick, manager of the United States Employ-

Single Head Spring NEEDLE Knitting Machine



PRODUCES 100 YARDS PER 8 Hr. DAY

The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

Production is approximately 100 yards per 8 hour day, using 6 feeds.

Features: Electrical driven by V belt simplified motor drive . . . electrical yarnstop motion . . . and needle stop motion.

Install one of these machines today, and in a few hours after reaching the mill it will be ready for operation!

For details write us direct.

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ONEIDA ST. **SYRACUSE, N. Y.**

NEW BEDFORD, MASS. ALLEN COMPANY

THE *Right Beam* FOR *Any Yarn*

130-156 River Road, New Bedford, Mass.

So. Rep. L. E. Wooten, Fort Mill, So. Car.

THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

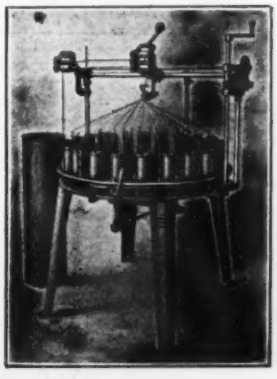
NEW BRUNSWICK NEW JERSEY

NEBUTTCO

BRAIDERS

We are confident of our ability to give satisfactory service in arranging your braiding equipment for efficient production.

Our engineers are at your service and our experimental laboratory is at your disposal.



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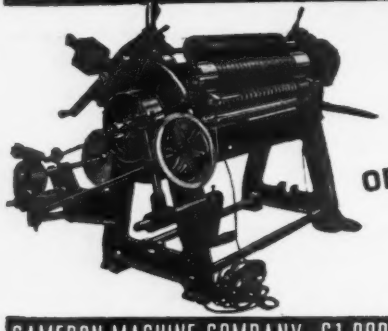
their specialized skill and experience
of
20 years in the Textile Industry
to
analyze, design, and economize
on your
MATERIALS HANDLING

OTHER SERVICES:
PLANT LAYOUTS. CONTROLS FOR SUPPLIES, MACHINES, MAINTENANCE, QUALITY AND WASTE PROCESSING METHODS, MANUFACTURING CONDITIONS, ORGANIZING OF ADMINISTRATIVE ROUTINES.

Camachine 26-2A



FOR SPEEDY PRODUCTION OF NARROW STRIP IN ROLLS

CAMERON MACHINE COMPANY - 61 POPLAR ST. BROOKLYN 2, N. Y.
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GREENVILLE • SOUTH CAROLINA
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BLEACHERIES • STEAM UTILIZATION • STEAM POWER PLANTS
WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

NEWS ABOUT MEN

ment Service office at Winston-Salem, N. C., for the last seven years, has been named director of personnel for Hanes Hosiery Mill at Winston-Salem.

Ivey Murray, Atlanta, Ga., is the newly appointed director of personnel for Lanett unit of West Point Mfg. Co., Lanett, Ala., succeeding **H. G. Bradshaw**, resigned.

W. P. Sheppard has relinquished his duties with Callaway Mills, LaGrange, Ga., and has become director of community activities for Laurens Cotton Mills, Laurens, S. C.

Russell Schofield, formerly of Waterhouse Co., Webster, Mass. is now office manager of Lawrence Blanket Mills, of Webster, Mass.

Joseph Eble, who has been assistant superintendent of Carter Fabrics, Inc., Greensboro, N. C., for two years, and prior to that associated with Duplan Silk Corp., Hazelton, Pa., for 35 years, has succeeded **James Eskridge** as assistant director of research and development for Carter Fabrics, S. Slater & Sons, Cleveland Cloth Mills, and the Stanley Mills, with headquarters at the Cleveland Cloth Mills, Shelby, N. C.

Harry Felch has become associated with Alfred C. Gaunt & Co., New York, selling agents for Merrimac Mills, Methuen, Mass., and will begin his duties immediately. Mr. Felch was formerly selling agent for George Mabbett & Sons.

Henry T. G. Dyson, who founded the Hudson Worsted Co., Hudson, Mass., helped to celebrate its 50th anniversary recently by entertaining its 650 employes, and presenting service pins and war bonds to all employees of 20 years service.

Will R. Florob has been appointed general manager of Wilcox Lace Corp., Middletown, Conn. He was formerly vice president of A. Wimpfheimer & Bros., Inc., Stonington, and had been with the organization for 22 years.

Dr. T. Earl Jordan, formerly with the Barrett Division of Allied Chemical & Dye Corp., Philadelphia, Pa., has joined the staff of the Institute of Textile Technology, Charlottesville, Va., as a research associate. He holds degrees in science from Atlantic University, University of Richmond, and Duke University.

William L. O'Donovan has been named manager of filament yarn sales for Celanese Corp. of America, New York. **J. Guyton Boston** had been named assistant to **Col. Harry Price**, vice president in charge of yarn sales.

Dr. William E. C. Yelland and **Dr. Samuel W. Waisbrot** have joined the staff of Milton Harris Associates, Washington, D. C.

Paul M. Jones, former advertising manager of the American Institute of Laundering, has joined the sales promotion division of the National Cotton Council to begin operation of postwar sales projects dealing with wearing apparel and household goods.

William D. Benson has been appointed assistant general sales manager of American Viscose Corp., New York, succeeding to the position formerly held by **Alfred C. Werner**, who resigned to become president of Fabritex Corp. Previously Mr. Benson had been for six years manager of the company's viscose rayon sales division. He joined American Viscose in 1924 as a salesman. He is succeeded by **William G. Luttge**, previously assistant manager of the viscose rayon sales division in charge of rayon tire yarn and Vinyon sales.

Richard MacHenry has joined the industrial division of American Viscose Corp.'s textile research department to handle mechanical development work in connection with industrial uses of rayon. **W. T. Boyer** has joined the department's knitting division and will work as an assistant to **Richard F. Eshleman**, division head.

Fred Warren, with Rollins Hosiery Mills Inc., for the last 15 years has been named manager of Nu-Maid Hosiery Mill, Stroudsburg, Pa.

R. E. Primm has become general manager of Rome Hosiery Mills, Rome, Ga.; **Waymon Shaw** has been promoted to supervisor of first shift knitting operations, assisted by **Frank Reinhardt**; **Robert Poole** will supervise the

PENICK & FORD, LTD.
INCORPORATED
CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. • • • • CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. • • • • SPARTANBURG, S. C.

John:
Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes.
Jim

Your Standard Specification for Silicates

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INSURES SATISFACTION

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MANUFACTURERS OF
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RAPIDASE

for de-sizing cottons, rayons and mixed goods

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Assures rapid, dependable de-sizing
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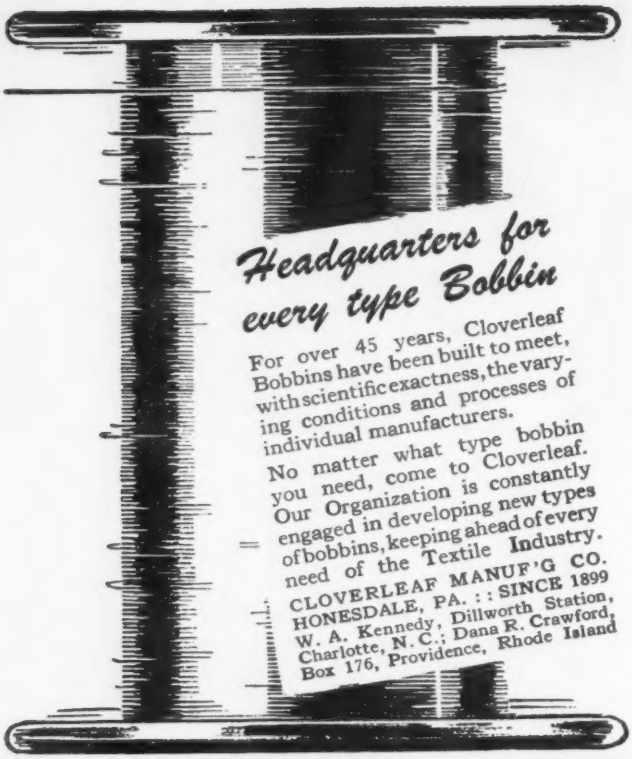

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For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.

No matter what type bobbin you need, come to Cloverleaf. Our Organization is constantly engaged in developing new types of bobbins, keeping ahead of every need of the Textile Industry.

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Bobbins . . . . . .

New type cone drive spindle and bobbin available at end of war.

"FLASH-O-LENS"

The illuminated magnifier (5X to 100X)

For defect analysis textile research, process control, fiber identification and fabric inspection "Flash-O-Lens" provide a simple, efficient and economical mill service.

Available in several models, powered by A.C., D.C., or flashlight battery with various combinations of interchangeable lenses. Send for our illustrated catalog.

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STATIC
NEUTRALIZER

Reduces waste and Stabilizes the production rate in many operations

USED ON

CARDS - CONDENSERS - DRAWING FRAMES
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NAPPERS - SHEARS AND MANY OTHER MACHINES

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BOX 268, PORTLAND, MAINE

second shift; and **J. L. Jacks** will be supervisor of maintenance, dyehouse and boarding departments.

J. C. Garrett, Reidsville, N. C., superintendent of the Reidsville Throwing Co., local plant of Burlington Mills Corp. since 1939, resigned Aug. 25.

R. W. Faries has become superintendent of Hudson Cotton Mfg. Co., and Caldwell Cotton Mills, both of Hudson, N. C. He was formerly carding superintendent of Arcade Cotton Mills, Rock Hill, S. C.

W. O. Ruffin has resigned as superintendent of Bama Cotton Mills, Enterprise, Ala., and has become superintendent of Moultrie Cotton Mills, Moultrie, Ga.

C. A. Butterworth has become production manager of Fitzgerald Cotton Mills, Fitzgerald, Ga., succeeding **J. H. Mayes**, who continues with the corporation as executive vice-president.

Joseph D. Scanlon, Sr., who recently resigned as supervisor of the finishing department of Holyoke Worsted Co., Holyoke, Mass., is filling a similar position with Hockanum Mills, Rockville, Conn.

Leslie Buker, formerly of Uxbridge Worsted Co. is now superintendent of Gardner Woolen Mills, Gardner, Mass.

George McCannont, formerly of Broad Brook Co., Broad Brook, Conn., is now weaving overseer for Hartford Woolen Co., Hartford Conn.

Harold S. Brook is now superintendent of Somersworth Textile Co., Somersworth, N. H. He was formerly with Demetre, Sault & Ciriez, Ltd., St. John's, Que.

Norman Brearley has become superintendent of Sangerville Woolen Co., Sangerville, Me. He had been with Angus Park Woolen Co., Hanover, Conn.

James Eskridge, superintendent of weaving and preparation processing for Carter Fabrics and Cleveland Cloth Mill, Shelby, N. C., for the past year, has accepted the position of superintendent of Staunton Textile Corp., Staunton, Va.

Samuel Boyd has retired as spinning overseer for Lockwood Mfg. Co., Waterville, Me.

Melvin E. Seals, formerly assistant superintendent of Dixie Mercerizing Co., Chattanooga, Tenn., has become superintendent of Carlton Yarn Mills and Nuway Spinning Co., Cherryville, N. C.

Joe D. Moore has resigned as superintendent of the knitting mill, Washington Mills Co., Mayodan, N. C., to become production engineer-manager of United Hosiery Mills Corp., Chattanooga.

G. R. Walls has resigned as general superintendent of carding at Robeson Textiles, Inc., St. Pauls, N. C., and has become general superintendent of carding and spinning at Leward Cotton Mills, Inc., Worthville, N. C.

Obituary

Eustis L. Hopkins, for many years an important figure in the Worth Street district, died early in September. He started business with Joy, Langdon & Co., New York, becoming a partner. On its dissolution in 1911 he joined Bliss, Fabyan & Co., becoming eventually chairman of the board. He retired when Bliss Fabyan liquidated several years ago.

Leo Altenberg, department sales manager of the Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., died in New York, Sept. 13. A graduate of Columbia University in 1915, he founded the Gaskill Chemical Corp., Brooklyn, N. Y., which was subsequently acquired by Calco in September, 1929.

Louis C. Perrier, 71, vice president and treasurer of National Silk Co., South Coventry, Conn., until his retirement two years ago, died recently at Providence, R. I.

Everett Lynes Amis, 54, retired secretary-treasurer of Dyersburg Cotton Products Co., Dyersburg, Tenn., died in New Orleans recently.

John P. Farnsworth, 58, formerly president and general

NEW MODEL • HIGHEST ACCURACY
CHRONOMETRIC
TACHOMETER

Readability to 1 RPM per division. Guaranteed accuracy well within ½ of 1%. Indicates RPM directly on the dial without any calculations over a fixed period of 6 seconds. Negligible torque. Two models with ranges 0-1000 RPM or 0-10,000 RPM, each suitable for double rated range.

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MURDOCK Bobbin Holders

Two exclusive features Affording Long Life.

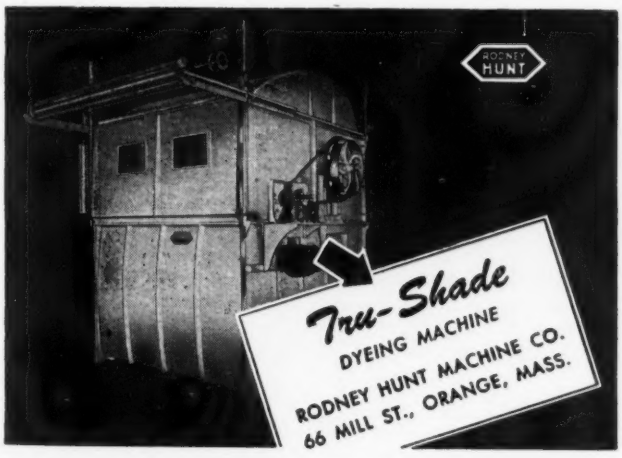
1. Automatic - bobbin holders equipped with holding wings electrically hardened all the way through.
2. Holding wings held positively in position by skeleton washer — no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.

Manufacturers of Bobbin Holders for Over Fifty Years



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It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

Director of Circulation,
TEXTILE WORLD,
330 West 42nd St., New York 18, N. Y.

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A complete dictionary and encyclopedia of staple cotton fabrics

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THESE questions are answered for you — specifically and definitely — in this book. "A long-time need by the textile industry and allied trades has been met by its publication," says *Textile World*. "Provides a text and reference book of inestimable value to textile manufacturers, designers, converters, selling agencies, students, wholesalers, department-store buyers, and persons interested in home economics. Included in the book are definitions, descriptions, constructions, and illustrations of the many types of plain-woven fabrics, leno fabrics, twills, sateens, crepes, terry, and other fabrics manufactured for apparel, household, and industrial purposes. Two features which merit particular commendation are the illustrations, natural size and enlarged, of nearly 200 different fabrics, and the excellent index."

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241 pages, 6 x 9 illustrated, $3.50

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COTTON LOOMFIXERS' MANUAL

Brings you step-by-step, clear, practical instructions on all phases of cotton loomfixing. The material is so presented that the book can serve as a textbook for courses in loomfixing or as a self-study manual for those who wish to learn the art of loomfixing or who wish to improve their knowledge and skill.

197 pages, 6 x 9
108 illustrations, $2.50

Note what this book covers:

1. Gray Plain-woven Fabrics and their Derivatives
2. Gray Leno-woven Fabrics
3. Gray Twill-woven Fabrics
4. Gray Satin-woven Fabrics
5. Staple and Specialty Dobby-woven Gray Cloths
6. Towelings
7. Colored-yarn Fabrics
8. Tickings
9. Flannels
10. Seat-cover and Awning Fabrics
11. Drapery Slip-covers, and Upholstery Fabrics
12. Table-cover Fabrics
13. Corset Fabrics
14. Bedspread Fabrics
15. Cut-pile Fabrics
16. Filled and Coated Fabrics

Descriptions and Names of Converted Cloths (Not Basic Fabrics)

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. . . more economical to use because . . . . it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

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SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

NEWS ABOUT MEN

manager of Providence Dyeing, Bleaching & Calendering Co., died Aug. 31, in Providence, R. I.

Alfred Hemmerich, 54, assistant secretary-treasurer of Textile Machine Works, Reading, Pa., died last month. He has been with the firm for over 32 years and is brother of Hugo Hemmerich, general manager of Berkshire Knitting Mills.

Joel David Woodside, one of the organizers of the Woodside Cotton Mills, Greenville, S. C., died recently.

Walter M. Lamont, 65, for 37 years resident agent of the Wood Worsted Mill, Lawrence, Mass., reputed to be the largest worsted mill in the world, died Oct. 6. He joined the Washington Mills in 1899, the year when William M. Wood founded the American Woolen Co., and was soon transferred to the then new Wood Mill. Mr. Lamont had retired as of Oct. 1 and was succeeded by Col. Vere Painter, lately of the Army Quartermaster Corps.

Lt. James D. Lynch, 25, on military leave as associate editor of Monsanto Chemical Co. publications, in St. Louis, Mo., died of malnutrition in a Japanese prison camp on Feb. 5.

Jeter C. Guire, 62, secretary and general manager of Lenoir Mills, Inc., Lenoir, N. C., died recently.

Charles B. Gudebrod, 67, for many years president of Gudebrod Silk Mills, Stowe, Pa., died recently.

Mrs. Sarah Cole Curtis, 47, chairman of the board of directors of Columbia Mfg. Co., Ramseur, N. C., died recently at Greensboro, N. C.

Edgar E. Paquette, 70, president of E. E. Paquette & Sons, hosiery manufacturers, of Woodstock, Ont., and a designer of new hosiery creations and devices, died recently.

Dr. Richard N. Mulliken, 57, control manager of E. I. du Pont de Nemours & Co.'s organic chemical department, died Aug. 6.

Charles T. Kritler, 44, died in Philadelphia, Pa., recently. He was purchasing agent of Prudential Worsted Co.

Calvin E. Sweet, 75, for many years until his retirement in 1935 general manager of the B. B. & R. Knight, Inc., cotton mills, died Sept. 13, in Centreville, R. I.

George C. Best, 63, assistant agent of Wood Worsted Mill, American Woolen Co., Lawrence, Mass., died Aug. 18.

Nathaniel W. Doorly, manager of the women's wear department, Sanforized Division of Cluett, Peabody & Co., New York, died Sept. 7, at Bronxville, N. Y.

Louis H. Elliott, 71, sales manager of William Allen Son's Co. died suddenly Sept. 7. He had been with the company since 1899. For many years he had been in charge of the company's kier and other textile equipment sales.

Walter Blackstock, Sr., 70, Atlanta, Ga., manager of Scotch Woolen Mills, died recently.

Paul A. Kohn, 43, secretary of Seneca Textile Corp., died Sept. 7, at Scarsdale, N. Y.

Henry D. Leitner, Greenville, S. C., a textile engineer with J. E. Sirrine & Co., of Greenville, before he entered the Army, died in the Philippines Feb. 17. A captain, he was captured by the Japanese when Bataan fell early in 1942.

John H. Mattison, 73, former textile operator and executive, and formerly associated with Riverside & Dan River Cotton Mills, Danville, Va., died in Lakeland, Fla., recently.

Ira C. Bitler, 63, who had been associated with the Lanett Mill, Lanett, Ala., until his retirement about two years ago, died recently at Lanett.

Albert Rudolph Shinn, 69, Salisbury, N. C., for the last 27 years a foreman of Cannon Mills Co., No. 7, died Sept. 9.

Joseph Parks Primm, 62, superintendent of Rome Hosiery Mills, Rome, Ga., for 37 years, died recently.

James H. McCullough, 70, office manager for Putnam Woolen Corp., Putnam, Conn., died recently. He was one time secretary and treasurer of Waterman Worsted Co.

2 GOOD CHEMICALS FOR COTTON GOODS

V VIRGINIA

"VIRGINIA" (SODIUM) **HYDRO**

A dependable Hydrosulfite for Vat Dyeing and Stripping.

1. Crystalline, stable
2. Free-flowing; non-caking
3. Easily and Quickly soluble

Packed in 250 lb. *airtight* containers.

"VIRGINIA" (LIQUID) **SO_2** THE IDEAL ANTICHLOR

The "Old Reliable" of the finishing plant. Low concentrations...

— remove active chlorine
— neutralize residual alkalinity
— eliminate excessive washing

Constant make-up by continuous flow to the pit. Shipped in steel cylinders containing 150 lb. net weight.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

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LANE BASKET TRUCKS

Smooth - Light - Durable

Designed for
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Many Other Industrial Plants

W. T. Lane & Bros., Inc.
Mfrs.
Poughkeepsie, N. Y.

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

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INCORPORATED
2060 Brook St. Louisville, Ky.

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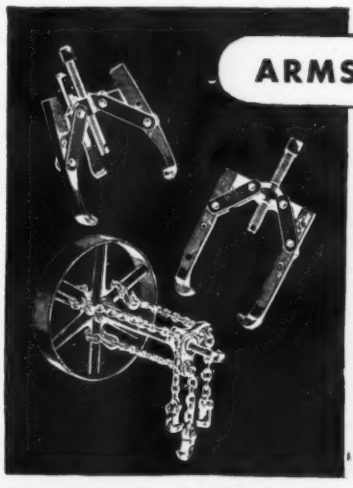

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Prompt Shipment

Save hours of time, prevent costly breakage and long shut-downs.
STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 34 types and sizes.
CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

Write for Catalog Sheets

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5340 Northwest Highway
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ALL SIZES FOR ALL PURPOSES

LARGEST LINE BUILT IN U.S.A.

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Other Sales and Service Branches in most Important Cities.

SEARCHLIGHT SECTION

POSITIONS VACANT

SALES ENGINEER, by well known industrial instrument manufacturer. Must be graduate engineer, experience in processes requiring recording and controlling instruments preferred. Would like men between ages of 25 and 35 who are willing to travel. PW-410, Textile World, 330 W. 42nd St., New York 18, N. Y.

HOSIERY MILLS superintendent wanted. Should be familiar with HSL full fashioned machines. Reply to P-411, Textile World, 330 W. 42nd St., New York 18, N. Y.

KNITTER AND Mechanic thoroughly experienced all types flat full automatic knitting machines. Able to knit in test and set up. Salary and bonus, opportunity. Apply Ainslie Knitting Machine Co., Inc., 750 Grand Street, Brooklyn, N. Y.

WANTED: OVERSEER to supervise ribbon mill operations on third shift. Ribbon mill experience not essential. We are looking for a man that has had some supervisory experience and knowledge of weaving. Well established concern in South Virginia—modern mill. Fine opportunity for advancement. Steady work all year round. Write advising age, education, experience and salary expected. P-412, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE EXECUTIVE, 16 years experience, seeking connections with ribbon factory as specialist. Can introduce manufacturing of woven labels or cooperate (assist) in establishing a new factory. At present is technical as well as commercial executive of ribbon in Switzerland. PW-413, Textile World, 330 W. 42nd St., New York 18, N. Y.

REPRESENTATIVES AVAILABLE

MANUFACTURER'S REPRESENTATIVE, Philadelphia trading area. Established 1928. Successfully covering hosiery and textile plants. Desires additional line as distributor or factory representative. Engineering and warehouse facilities available if required. RA-414, Textile World, 330 W. 42nd St., New York 18, N. Y.

SWEDISH REPRESENTATIVE for cotton and rayon, cotton and rayon goods, underwear, men's shirts, well established, looking for sole agency of American manufacturers. Frans Adler, Malmskillnadsgat. 43, Stockholm, Sweden. Information B. Nelken, 52-30 34th Street, Long Island City 1, N. Y.

VETERAN 37 years old, will represent mill or converter on Pacific coast, 15 years experience, well acquainted with the drapery and unholstery fabric jobbers and furniture manufacturers. Willing to finance own office and showroom in Los Angeles area and represent sales for the western states. Excellent character and credit references. Write RA-415, Textile World, 68 Post Street, San Francisco 4, Calif.

BUSINESS OPPORTUNITY

HIGHLY CAPABLE rayon and silk throwster, well experienced in throwing for the dress goods, hosiery, underwear, embroidery and novelty yarn trade, desires to contact individual or group financially interested in establishing a throwing plant. Good results guaranteed, excellent references. BO-416, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED

LONDON: A Firm of city merchants wishes to purchase quantities of men's sound second hand wearing apparel. Please send full particulars through W-386, Textile World, 330 W. 42nd St., New York 18, N. Y.

COMMISSION HOSIERY dyehouse wishes to lease or purchase—dyehouse building with ample water and steam for production of 10,000 lbs. daily. In Phila. area. W-417, Textile World, 330 W. 42nd St., New York 18, N. Y.

Expanding Operations of

INDUSTRIAL RAYON CORP.

Offer Opportunities for

TECHNICAL PRODUCTION MEN

of top supervisory caliber with successful record in viscose, spinning and/or textile operations.

PLANT ENGINEERS

with technical competence and broad experience in chemical equipment, maintenance and powerhouse operations.

INDUSTRIAL ENGINEERS

and Job Study Men, highly qualified in labor efficiency, incentives and management controls.

Training prerequisites for above—chemical, chemical engineering, mechanical engineering, textile engineering.

Please send complete details to Vice President in Charge of Production.

INDUSTRIAL RAYON CORP.
Cleveland 1, Ohio

Plant Engineer

A young, technically trained engineer wanted to head maintenance department of textile mill in Allentown area.—This is excellent opportunity for a progressive young man with experience in maintenance management to become associated with a progressive textile organization. Write, stating age, education, experience, references, and salary expected.

P-389, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

VELVET DYE HOUSE SUPERINTENDENT

A very interesting proposition is available for a man who is capable of taking complete charge of a velvet dye plant. Purchasing supplies, managing labor, supervising production, etc. Replies should give in detail, education, experience, references, etc.

P-409, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

EXPERIENCED SEAMLESS FIXER

Capable of fixing 400 needle Scott & Williams machines and training operators.

Unusual opportunity and attractive salary since high requirements necessary.

Air-conditioned mill located at Batesville, Mississippi.

THE BATESVILLE COMPANY, BATESVILLE, MISS.

Textile engineer available; good record in present and past employment. Experienced development, waste control, quality control, and modern management methods. Good reason for change.

PW-396, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

MASTER MECHANIC

for weaving operations

capable of setting up small mill, fixing fancy goods looms, and generally assisting in production. An opportunity for the right man to grow with an aggressive organization. Reply in confidence stating age, details of experience, etc.

P-405, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE MILL ENGINEER

Modern textile mill near Montreal requires services of Plant Engineer conversant with lay-outs and maintenance. State experience, qualifications, salary. Refer to Montreal Office N.S.S. File No. 179.

P-393, Textile World
330 West 42nd St., New York 18, N. Y.

THERE ARE MANY ATTRACTIVE OPENINGS IN MILLS

In all sections of the United States and Canada. If you are seeking employment, write us fully regarding your experience and position desired; we will inform you of positions now open in your line of work.

CHARLES P. RAYMOND SERVICE, Inc.

294 WASHINGTON STREET BOSTON 8, MASS.

Over 45 years' confidential employment service for men seeking positions and employers seeking men.

SEARCHLIGHT SECTION

CONTROLLER, TREASURER OR ASSISTANT TO SENIOR EXECUTIVE—AVAILABLE

Twenty years of sound diversified experience in finance, accounting, management. Installed budget, cost and general accounting systems. Knowledge of standard costs, taxes. Economic minded. Proven administrative ability. Desire heavy responsibilities. Age 41.

PW-419, Textile World
330 West 42nd St., New York 18, N. Y.

SALESMAN

That developed a leading liquidating corporation doing two million a year could repeat for a reliable firm.

Gen. P. O. Box #165
N. Y. City #1

SWEDEN

Well introduced representative wants to represent in Sweden on commission basis American manufacturers in the following lines—

Bath articles in Toweling—such as bathing wraps, bath towels, etc., also in connection with chenille.

Stockings—childrens' and ladies' wool, cotton, artificial and pure silk.

Sport Stockings & Socks—childrens', ladies' and gentlemen's.

Cheaper and Medium Qualities

First class references given.

Reply to "ENERGY"
care of
Gumaelius Advertising Agency
STOCKHOLM, SWEDEN

REPRESENTATIONS in Textile Machinery

and Accessories. Also of manufacturers or converters of Cottons, Rayons, Woolens and Worsteds and Yarns of all kinds.

Firm established in Santiago, Chile, since 1917, and in Sao Paulo (Brazil) since 1940 (partners American) highly introduced in the textile trade in these markets, with specialised salesman, requires agencies. Own Cotton & Rayon piece goods & knitting mills. Chief executive now in New York. Personal interviews can be arranged. Write to H. G. & Co., 79 Wall Street, (Room 905) New York, N. Y.

AGENCIES

wanted in all kinds of textile products by firm well connected with Textile Wholesalers in Sweden.

A-B HANSSON & KRUUSE
SVELJUNGA, SWEDEN

BRAZIL

Reliable sales organization would like to start negotiations as representatives or distributors of manufacturers and exporters in cotton, mercerized cotton, rayon, colored woven, and other fashion lines, etc. Best references. Please write to Inter Comercial e Industrial Ltda, Caixa Postal 52-São Paulo, Brazil.

Washington, D. C. Resident Representative

Business man with Government agency staff experience, available to substantial firm as Washington representative in selling to the Government; negotiations with Washington offices of Government agencies; or surplus property purchases. References.

RA-401, Textile World
330 West 42nd St., New York 18, N. Y.

WE WANT TO LEASE, WITH OPTION TO BUY, AN ENTIRE BUILDING SUITABLE FOR WOOLEN MANUFACTURE . . .

Following are our requirements:

1. An entire building of 15,000 to 20,000 sq. ft.
2. Preferably in Connecticut, Rhode Island, Massachusetts or Pennsylvania, essentially in a woolen and worsted manufacturing center.
3. Suitable for the weaving and finishing of fine woolens and worsteds.
4. Water and disposal facilities must be good and ample for the finishing of woolen textiles.
5. Power requirements—3 phase, 60 cycle, 550 volt.
6. Facilities for generating heat and live steam sufficient to produce 100-lb pressure
7. Building must be in good condition, preferably one or two stories high.

B. M. Kaufman, Inc., 1441 Broadway, New York, New York

TO

BRAID AND NARROW FABRIC MANUFACTURERS

Sales agent offers excellent representation on all types of braids and narrow fabrics. Can style and develop new numbers and products. Many years of successful selling and have always done a volume of business. Highest of recommendation. Interested in arranging proposition with one concern exclusively.

RA-407, Textile World
330 West 42nd St., New York 18, N. Y.

Sales Organization

contacting Cotton, Rayon, Woolen and Worsted mills in New England and Middle Atlantic States desires one or two additional accounts. Efficient representation.

RA-391, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Weaving Mill

A reliable converter having a New York sales office and large established trade wants to buy (or will consider investment on an equitable basis) a rayon and cotton weaving mill. Preliminary contacts in complete confidence. Principals or agents protected.

W-395, Textile World
330 West 42nd Street, New York 18, N. Y.

WILL PURCHASE MILL

Will purchase entire mill or interest in mill with efficient management remaining. Fifty automatic looms and/or fifty box looms or more. Can supply yarn and finances. Also Jacquard plant equipped for tie goods.

BO 402 (Agency) Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Surplus

Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes

W-270, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
for

EXPORT COTTON SPINNING MILL

3000 spindles to 10,000 spindles for carded yarn; also comb yarn.

One Spinning plant for carded yarn up to 3000 spindles.

Rayon Weaving Plant—prefer automatic looms up to 400 loom plant complete with auxiliary equipment.

Principals only—Apply

BO-392, Textile World
330 West 42nd St., New York 18, N. Y.

WOOLENS-WORSTEDS-WANTED

Will purchase—direct—for cash—part or entire production of your mill men's or women's wear fabrics, coatings, suitings & dress goods.

W-398, Textile World
330 West 42nd Street, New York 18, N. Y.

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Engineering, design & development of labor-saving and textile machinery (knitting machines). Inventions and products developed, fabric analysis.

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HAnover 2-3807

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Consultant for Industry on
MOISTURE AND FUNGUS PROBLEMS

For the duration of the war, Chief of Moisture and Fungus Proofing Section developing and applying tropic-proof materials for U. S. Army communications equipment. Now available to manufacturers and materials suppliers for consultation on protective coatings, insulation and choice of engineering materials.

P.O. Box 111 — Long Branch, N. J.

(Additional Wanted Advertising on page 264)

SEARCHLIGHT SECTION

WANTED

EQUIPMENT

New Or Used Or

COMPLETE PLANTS

For a Woolen Spinning Plant for the manufacture of tweed yarn from Indian Wool. Production of 1,000 lbs. in 9 hours. Equipment to include Woolen Mules, Condensing Cards, Mixer, Opener, and Garnetts for woolen yarns and rags.

Also for a plant for the manufacture of hand-knitting wool yarn up to 4-ply from tops, with production of 1,000 lbs. in 9 hours.

Submit catalogs, lists, descriptions, and prices to

Model Woolen & Silk Mills
Kalianwala Bldg., Kaulsar, Amritsar, India

WANTED

SMALL WEAVING MILL

suitable for production of novelty fabrics of filament rayon, and spun fibers. Will purchase a going plant or buy interest. Submit full particulars in first letter.

W-404, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

1—MERROW SEWING MACHINE

Model 60-D3-B. Must be in good condition. Advise Price. Immediate delivery.

ROCK RIVER WOOLEN MILLS
JANESVILLE, WISCONSIN

WANTED

RAYON WEAVING MILL

Up to 125 Looms

Address Replies

To

W-408, Textile World
330 W. 42nd St., New York 18, N.Y.

WANTED

3 #101 Foster Cone Winders with at least 240 spindles. 1 #56 Foster Doubler with 72 spindles. Write or wire giving age, condition and price to:

ATLANTA WOOLEN MILLS
598 Wells St., S.W. Atlanta, Georgia

WANTED

48 to 60 looms—4 x 4 C & K Intermediate Head; 60" to 72" reed space; both shaft and jacquard. Also interested to buy complete plant.

W-400, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED TO PURCHASE

Small Dye Plant—Vicinity of N. Y. C., capable of dyeing and finishing rayon, cotton and wool piece goods. Give full particulars in reply.

W-397, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED

SEVEN 45" COTTON CARDS

WILL CONSIDER 40"

ATLANTA WOOLEN MILLS CORP.
598 Wells St., S.W., Atlanta, Georgia

FOREIGN MILL OWNERS

In buying Used American Made Textile Machinery, you need protection and advice that you can depend on. We are thoroughly experienced practical textile mill men that know our business.

We are not Machinery Dealers. Through our many sources, we will obtain for you the exact equipment to meet your requirements.

We do not deal direct, but through reputable Exporters. We can supply you with the names of these Exporters, with top Dun & Bradstreet Ratings, and you can be assured that they will protect your interests in every way.

LAWRENCE H. KELLY
Textile Machinery Consultants
P. O. Box 2442
Paterson, New Jersey, U. S. A.

WANTED

40" Flat Top Cards—Saco-Lowell or H. & B. American and Lap Pickers.

write

TEXTILE MILLS
3948 W. Roosevelt Road Chicago, Ill.

WANTED

Two Smith-Drum or similar type 8 or 9 pocket Monel Dye Machines. One 400 Lb. or 500 Lb. Monel Franklin or Smith-Drum Package machine.

NATIONAL DYE WORKS
1417 W. Jackson Blvd. Chicago 7, Ill.

WANTED

Complete six or twelve-comb section. Noble combs. Must be in good condition. Give full particulars, price, present location to

W-399, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

One Foster 6 spindle, Model 40, five or six inch traverse, cone winder for back winding wool yarn. Must be good condition. Advise price.

ROCK RIVER WOOLEN MILLS
JANESVILLE, WISCONSIN

WANTED

Tompkins Knitting Machines

Large tables to take 30" cylinders. Reply giving full particulars and price.

JOSEPH SIMPSON SONS, LTD.
Berkeley St. & Esplanade Toronto 2, Canada

WANTED

TAPE CONDENSER

48 Inch 96 Ends.

Give Full Particulars

W-403, Textile World
330 West 42nd St., New York 18, N. Y.

TROY TUMBLER

42 X 60, 2 Pockets

Completely motorized, with reverse control box. Separate lint receptacle. Complete in every detail. Practically new. Private owner.

FS-373, Textile World
330 W. 42nd St., New York 18, N. Y.

MACHINERY FOR SALE

22—Bramwell Feeds—Whitin—39"
3—Sliver Lappers—Whitin
3—Ribbon Lappers—Whitin
16—Combers—Whitin—Model D
8—Combers—Whitin—Model C
1—Slubber—Lowell—11 x 5½—72 Spindle
2—Interdrafts—Whitin—9 x 4½—114 Spindle
2—Interdrafts—Woonsocket—8 x 4—128 Spindle
5—Fine Frames—Lowell—7 x 3½—168 Spindle
2—Fine Frames—Saco-Pettee—7 x 3—176 Spindle
90—Cone Winders — Saco-Lowell — Camless — 16 Spindle
3—Tube Winders — Saco-Lowell — Camless—16 Spindle
1—Bobbin Stripper—"Airway"
8—72" C&K—2x1—S—3 Shuttle Changing Looms —Intermediate Head—25 Harness
20—78" C&K—4x1—Automatic Jacquard Damask Looms—Dobby Head
4—Worsted Twisters—Saco-Lowell—104 Spindle —3½" Ring—4¼" Gauge Tape Driven
8—Bottle Bobbin Winders—40 Spindle
3—Single Jackspoolers—40"—48 End
1—Multiple Jackspooler—6 Drum—40"—48 End
100—Jackspools (New)

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2500 Series

13 and 15"

12 and 14 cut

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3—200 KVA—110/220—2200 V.
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2—48" Hercules—1 Inconel, 1 Rubber lined basket, aluminum covers 7½ HP, 220V, 3P, 60 Cycle Motors

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Several hundred rolls water proof paper-various widths-smooth and creped. Also 100 rolls creped inner liner 54" wide-samples sent upon request

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100—Draper Model E 45" Looms. Very good condition. Very reasonable.

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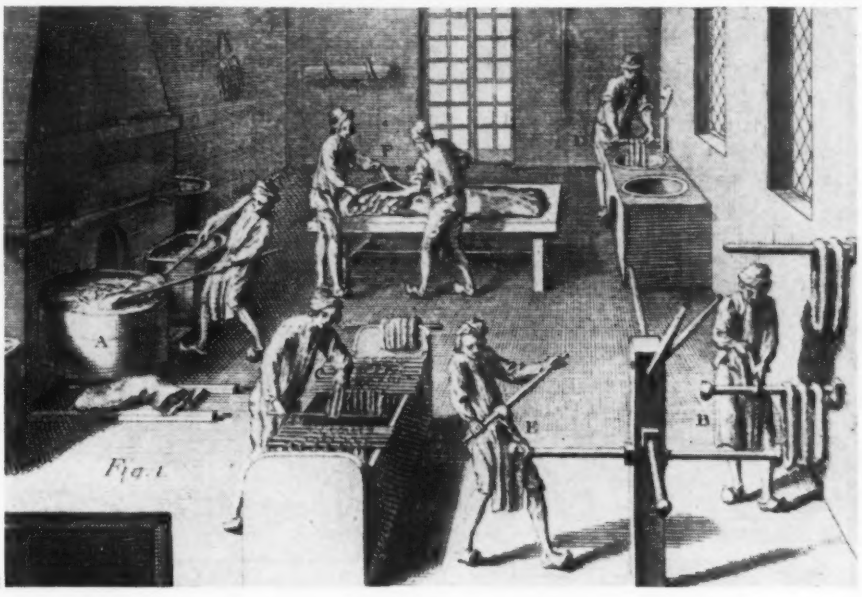
THE barbarians who overran ancient Europe wiped out knowledge of the early art of dyeing textiles; but it was revived in medieval days. Dyestuffs first came from the Orient via Venetian merchants. The discovery of America introduced many new dye materials. Dyeing plants soon dotted Holland, France, Germany, England. The perfection of vats, boilers and other equipment kept pace with improved processes, as coal-tar products supplanted vegetable matter.

Illustration from the Bettman Archive



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1—60" C & M Brusher
1—66" C & M Brusher and Sander
3—46" x 52" Button Breakers
3—42" Butterworth 3-Roll Friction and Rolling Calender, 1—motor driven, 2-belt dr.
1—60" D. & F. 2 cyl. Iron Shoddy Card
1—Sargent Yarn Conditioning Machine
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—46" Windle Doubler
1—Franklin Package Dyeing Unit, incl. three 100-lb. and one 300-lb. machine, extractor
1—26" Tolhurst Extractor
1—30" American Laundry belt driven extractor
1—40" Tolhurst extractor, belt-driven
1—60" Broadbent Copper Basket Extractor
2—Hunter No. 10 Fulling Mills
10—40' C & M 42", 50", 100" Folding Machines
1—52" James Smith Card Grinder
12—76" cloth Draper modified ↄ automatic looms, 81" reed space with Lacy tops for 6 harness work, motor driven

FOR SALE

6—92" C & K 4 x 4 Box Looms, motor driven
1—72" Kenyon 2-Bowl Crab
1—80" D. & F. 20 roll Double Acting Napper
1—144 spindle Platt 2½" ring twister, motor driven.
1—96 spindle D. & F. 3½" ring twister.
9—100 spindle Saco-Lowell 3½" ring trap twisters.
1—48" S. & F. single cylinder Garnett.
1—Van Vlaanderen 5 Can Narow Fabric Finishing Machine

18—92" C & K 4 x 4 25 Harness Belt driven woolen looms
4—240 sp. D & F 2" gauge Mules
24—72" Stafford 2 x 1 automatic Looms 77" reed space, 25 harness head motions, motor driven

1—40" Parkhurst Burr Picker
3—65½" Voelker- double bed rotary cloth presses belt driven 16" cyl.
1—66" Gessner double bed rotary cloth press belt driven 12" diameter roll
1—84" Voelker Cloth Press, motor driven
1—60" C & M Plush Shear
2—66" C & M 2-Blade Shears
2—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Monforts 2-Blade Shear
1—Shultze 106" Double Shear
1—Smith & Furbush Rag Shredder
1—42" C & M 5 Burner Gas Singer
12—256 Sp. Whitin 2" Ring Spinners
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½ x 6" Wooden Spools
6—120 Spindle Draper Spoolers
1—60" C & M Tiger, Arranged for Mtr. Dr.
2—100 Spindle Foster tube winders, belt driven
1—200-spindle Draper 2¼" Ring Tape Drive Twister
5—D & F Warpers with Beamers, etc., 82" to 100"
2— 4" Entwistle Warpers

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. MLC 1923

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1—Ager 50" cloth
1—McCreery 54" Brush, 2 roll with blower.
1—Vertical 62" Brush, 6 rolls, Calender rolling up head.
1—Calender 42" Friction 3 roll.
1—Calender 50" Cotton 3 roll.
1—Decatur 72" complete with pump.
1—Decatur, Semi 72", with pump & motor.
1—Decatur, Full 72" with pump & motor.
4—Doublers 40" to 60" cloth.
1—Dryer, Knit Goods Drum type with additional Carbonizing section.
1—Dryer, Loop 84" Housing complete.
1—Dryer, Pin 62" Housing & fans, complete.
1—Dryer, Raw Stock Approx. 200-Lb.
1—Dyeing Unit, Skeins 28 arms complete.
3—Dyeing Machines, Skein, 28 to 56 stick.
4—Extractors 24" to 60".
1—Folder 54" adjustable.
1—Fulling Mill Double Compartment.
1—Pr. Guiders 72".
2—Kettles Woolen Type 6' & 12' Boxes.
4—Mangles 40" to 66" 2 & 3 roll units.
1—Measuring Machine 66" with clock.
5—Nappers 66" to 90" width, 20, 24 & 36 roll units.
2—Presses, Rotary 66" & 78" Double Bed Units.
3—Shears Single Blade Units 36" to 80" widths.
2—Shears Double Blade Units 66½".
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3—Washers 6' Boxes
1—Pr. Squeeze Rolls 80" x 7" diameter, with size pan.

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CARDING, SPINNING & WEAVING

1—Set 3 cylinder Woolen Cards 48x48, Bramwell Feed, intermediate feed, rubb condenser.
3—Sets 2 cylinder Shoddy Cards, 60x48 and 48x60. complete
2—Sets 5 cylinder Shoddy Cards 48x48 complete.
4—Sets 2 cylinder Worsted Cards 48x48 and 60x48 complete.
5—Combers, worsted complete with circles.
2—Tape Condensers for 60" Cards.
4—Ring Rub Condensers for 48" Woolen Cards.
1—Draw Box 2 spindle 14x9.
1—48" Intermittent Rag Duster, capacity 800 to 1000 pounds.
2—Feeds Bramwell 40" & 54".
1—Garnett 3 cylinder 60x30, automatic feed complete.
1—Garnett 2 cylinder 60x20.
8—Gill Boxes Single—Double head units.
2—Intermediates 9x4½, 84 spindles each.
3—Draper Looms D 40" cloth, 8 harness.
43—Draper Looms D 42" cloth, 8 & 12 harness.
60—C&K Looms 41½" 4x1 box.
13—C&K Looms 46" 4x1 Box.
160—C&K Looms 55" 4x1 box.
50—Draper Looms 90" Model L Sheeting type.
20—C&K 4x4 72" 25 harness dobby, Looms.
24—Stafford 72" 2x1 Box Looms
18—C&K 79½" 4x1 Box Looms.
26—C&K 92" 4x4 Box 25 harness, motor driven Looms.
2—Mules 2" Gauge, 210 & 240 Spindle units.
2—Mules 650 Spindles each for Worsteds.
1—Mule for Woolen, 324 spindle, 1 15-16" gauge.
1—Mule 306 spindle. 2" Gauge.
8—Mules—225 to 360 spindles, 2" to 2¼" gauge.
4—Vertical Openers with Grid-Bars.
1—Burr Picker 24".
2—Rag Pickers 18" x 30" Ball Bearing Cylinders.
1—Picker Waste 24" complete.
1—Slubber, 12 x 6, 64 Spindles.
2—Slubbers, 11 x 5½, 68 Spindles each.
2—Speeders 8x3½, 144 spindles each.
3—Spinning Frames Worsted 3½" pitch 144 & 160 Spindle Units.
8—Spinning Frames Cotton 3½" Gauge, 208 Spindles each.
2—Twisters 5" ring, 7" Gauge, 88 Spindles each.
10—Twisters 3" Ring; 216 Spindles each.
1—Twister, 2" Ring, 128 Spindles
4—Winders, Lazenby, 30 Spindles each.
5—Winders, Foster, #30 100 Spindles each.
2—Winders Universal #80 14 Spindles each.

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6—V.V. & Tolhurst 54" & 60"; rubber & copper baskets.
8—V.V. Fletcher & Tolhurst 40-48", copper lined.
10—Tolhurst, American Laundry, Bock & Troy 14'-42", copper baskets.
2—48" Raw Stock Extractors.
1—Hercules 30" Open Top Extractor.
1—Gessner 72" Vacuum Extractor.

SCOURING & DYEING

3—Sargent & Lorimer 2&3 bowl scourers.
6—Klauder-Weldon Skein Dyeing Machines.
1—Obermaier Yarn Dyeing Machine.
1—Geyser Type Skein Dyeing machine.
9—Franklin Cast Iron Pkge. Dyers—6-600#.
2—Haveg Totally enclosed dye becks.
1—Sargent Wool Dyer.
5—American Laundry & Zephyr 2 & 3 pocket rotary dyers.
1—12-string dyeing machine.
3—Giles Skein Dyers, 28 & 60 sticks.
5—copper dye tubs, 3'-20' lg.

WATER SOFTENERS

1—Permutit Water Softener, 103" lg. 63" wd.
2—10x10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8' dia. x 20' long, complete.

GARNETS—FULLING MILLS

3—James Smith 3-cylinder Garnetts.
1—P & S Single Cylinder 20x60" Garnett.
1—P & S 2-cylinder 20"x60" Garnett.
2—James Hunter #10 Fulling Mills.

DRYERS

3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
3—Sargent & Hunter Wool Carbonizers.
1—Phila. Raw Stock Dryer, 48" automatic feeder.
4—Truck Dryers, 1 & 2 trucks.
1—Pin Tenter Dryer, 64" wide.
6—Proctor & Schwartz Yarn Dryers.
1—Multipass Airlay Dryer.
1—V.V. 5-Tier Net Dryer.
2—Heathcote and Kenyon Cloth Dryers.
1—Proctor & Schwartz Hosiery Dryer.
1—Riggs & Lombard Cloth Dryer.
1—Sargent Wool Dryer. 1—P & S Apron Dryer.
1—National Loop Dryer, 96".
1—P & S Roller type Festoon Dryer.

NAPPERS

2—D & F single acting Nappers, 60 & 84".
3—Gessner & Woonsocket double acting Nappers, 60", 84" & 90".

TENTER FRAMES

1—Textile Fin. Mach., 90'x50" Tenter.
1—W & J 80'x50" Swing Tenter.
1—Heathcote Pin Tenter.

PALMER QUETCHES & TENTERS

2—V.V. Palmers, 60" & 72".
3—Morrison & V.V. 50", 60" & 72" Palmer Quetches.
1—Butterworth 80" Palmer.
2—V.V. & General Machine 60" Palmerettes.

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5—Textile & Butterworth 2-Roll Pad, 50", 62", 90".
1—Butterworth 2-Roll 80" Padder.
4—Butterworth 50" 2-Roll Starch Mangles.
1—James Hunter 50" Water Mangle.
5—Butterworth & Morrison 2 & 3-Roll Quetches, 50-72".

BUTTON BREAKERS

3—Morrison & V.V. Button Breakers, 50-72", brass rolls.

REAMERS—BATCHERS

4—Van Vlaanderen 50" & 60" Beamers.
9—Batchers, 48"-72".

COATING MACHINES

Plastic and rubber coaters, 50"-72".

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2—P & W Cloth Brushers, 72" & 100".

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4—E & Hall Flat Folders, 42"-60" with motors.
3—P & W & Windle 46"-60" Doubling, Reeling & Measuring.
1—96" Doubling & Folding Machine.

SEWING MACHINES

5—Morrow 60ABB & 60D3B on stands and tracks.
3—Union Special and Singers.

SLASHERS—DECATERS—DRY CANS

3—Saco-Lowell-Cotton Slashers.
1—P & W 72" Decater.
355—Dry Cans, 50" to 112" face, 23" to 84" dia.

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1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—3-Compartment Monel Rotary Washer.
1—60" Open Washer.

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4—60" MONEL LINED JIGGS. COMPLETE.
4—50" STAINLESS STEEL JIGGS. COMPLETE.

CALENDERS

2—V.V. Ball Bearing Calenders, 50" & 60".
6—V.V. Butterworth & Textile, 3, 6 & 7-Roll Hydraulic Calenders, 80".
3—Butterworth & Perkins 40", 54" & 80" 3-Bowl Schreiners.
2—54" and 65" Embossers.
1—Textile Fin. 3-Roll Narrow Friction Calender.

SHEARS

3—P & W 2-Blade Shears, 60" & 66½", complete with lint saving device and brushes.

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1—Butterworth Scouring Jig.
12—Morrison & V.V. 6' to 9' Dye Becks, stainless steel and wood tubs.
4—Morrison Dye Jigs, 50", S.S.

PRINTING MACHINES

4—R. B. & F. 1-10 color Print Machines, 40"-60".
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5—Tubing & Measuring Machines, 50"-60".
1—Hermas 60" Measuring Machine with Motor.
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24—C & K 92" automatic looms.
13—C & K 82" automatic looms.
10—Draper 79" automatic looms.
52—C & K 52" automatic looms.
24—C & K 4x4 Automatic Tapestry Looms, 64".
30—72" Jacquard Looms, C & K.

KNITTING MACHINES

150—1" to 21" Circular Knitting Machines.
4—Wildman 23" Ribbers.
2—Grosser Knitting Machines.

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2—BTA & BTS Motors, 25, 35 & 50 horsepower.
Star gears, mandrels, copper pans & doctor blades.
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2—30" Rag Pickers.
1—40" Kitson Pickers.
1—40" Mixing Picker.
2—Saco Lowell Condensers.
2—Saco Lowell Vertical Openers.
4—Pangborn Dust Collectors.
1—Conical Duster with dust blower.
1—Sargent Cotton Picker.

CARDING MACHINES

14—Sets D&F Wool Waste Cards, 48" x 48".
3—Sets D&F Woolen Cards, 48" x 48".
1—Woolen Card, 49" x 60" diameter.
3—Sets D&F Worsted Cards, 60"x54".
2—Sets D&F Worsted Cards, 60" x 48".
2—Sets D&F Worsted Cards, 54" x 54".
2—Furbush Worsted Cards, 48" x 48".
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16—Whitin D-2 Combers.
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2—5-cylinder 48"x48" Shoddy Cards, equipped with Bramwell Feeds & metallic breasts.
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3—Whitin & Atwood Skein Reelers.
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PRINT MACHINE, 10" sample or Ribbon
QUETCH, 3 roll, Morrison 60" Ball bearing
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RIBBON FIN. UNIT, Complete
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100—40" Loom Beams complete with Heads—Roper left off
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4—Saco Lowell Vertical Openers with Grid-Bars
53—Whitin 3" Gauge Band Drive Spinning Frames—240 Spindles Metallic Thread Guides
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350—2" 2500—2¾".

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5—50" Copper Dry Cans with gears & journals
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75—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

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- Calenders
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- Tentering Frames
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Excellent Textile Equipment

4-ABBOTT AUTOMATIC WINDERS
1938 Model
90 Spindles each
Total of 360 Spindles

LOOMS

100—Draper Model K 45" Looms, Belt Driven, 8" Bobbin.

600—Draper Automatic Looms with Slashing Auxiliary equipment.

200—C & K 2 x 1 Looms.

200—600 hook C & K Double lift jacquard heads.

32—C & K #1304 Fine Index Double lift single cylinder heads.

WINDERS

15—Universal Winders with Bunch Builders.

EXTRACTORS

2—60" Steam Driven Centrifgal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.

CAN DRYERS

1—6 Can Dryer, Copper Cans, 23" diameter, 50" face, complete with exception of motors.

1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.

1—Textile Finishing Machinery Company set of 8 Copper Cans—2 stacks, 4 Cans to a Stack, Vertical Stacks, 50" wide.

1—Textile Finishing Machinery Co. Copper can dryer consisting of 8 cans, 23" dia. 54" face with take-up, let-off. Reeves Variable Speed transmission.

1—Textile Rolling-up and steam machine equipped with copper can 40" dia. 48" face.

1—Textile Finishing Machinery Co. 8 Can Dryer, consisting of Copper Tinned Cans, 23" diameter, 54" Face with Take-up, Let-off, Reeves Drive, A.C. Motor.

1—Van Vlaanderen 5-tier, 4 section Conveyor Dryer, with Rods, 60" face, Motor Driven Fans, Airfin Heating Units.

DYEING EQUIPMENT

1—Rice, Barton & Fales Dye Jigg, 50" Roll, Wooden Tub, Metal-lined, complete with 2 Motors, 230 Volt, D.C.

4—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive with 1 DeLaval Worm Reduction Gear Unit, Direct connected to Lincoln 10 H.P. A.C. Motor, 550 volts, 60 cycle, 3 phase, 1200 RPM, with Control.

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1—Texiile 40' Pin Tenter Frame, Link Belt Drive, #3 Reeves General Electric 5 HP, 60 Cycle, 3 Phase Motor, 60" wide, General Electric Guiders, Steam Heating Coils.

1—Winsor & Jerauld 40' Tenter Frame stainless steel clips. Reeves drive. A-C Motor.

COTTAGE STEAMER

1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

DYE BECKS

1—Stainless steel lined 18" dye beck Tank 18" x 30" x 96" Single Slot reel, Brass Idler rolls. Geared link chain drive.

1—20' Stainless Steel-lined Dye Beck.

QUETSCHES

1—Van Vlaanderen 3 roll quetsch 60" face, Motor driven, chain drive by 1 h.p. General Electric AC Motor.

SCUTCHERS

1—Textile 58" Roller bearing Scutcher.

Special Sale

Complete cotton spinning unit. 6,000 spindles. May be inspected operating.

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120—Circular Rib Knitting Machines, 10" to 18", 8 feed, 10 cut to 13 cut.

SEWING MACHINES

Singer, Union Special, Merrow, Metropolitan and Willcox & Gibbs Flatlocks.

COUNTERS

34—Veeder-Root, Cloth Counters.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.

3—E & H Flat Folders, 45" to 60" wide.

KETTLES

7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallon capacity.

METERS

G. E. Steam flow meter.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor.

PRINTING MACHINES

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PRINT MACHINE MOTORS

5—Print Machine Motors, 23 to 35 H.P.

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1—#1 Nash Engineering Pump, Type 960.

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2—50" Van Vlaanderen Button Breakers.

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1—Hoey Tenter Chain, 1100 Textile Brass Tenter Clips.

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ITEM 100-E

CAN DRYER

Butterworth—27 cans—tin 144" Face x 24" Diam. Complete with Drive but without Motors

ITEM 10056

1—SCUTCHER

72" wide complete with vacuum pump and variable speed drive

ITEM 757-A

WHITIN QUILLING MACHINE

304 Spindle—3½" Gauge—10½" Traverse. Model J

ITEM D-11002

OPEN TYPE TENTER FRAME

Butterworth—Straight-away No. 00 Top-Opening Clamps 60 ft. long x 90" Wide Max. To handle up to 80" Cloth

ITEM 11001

1 COMPLETE BACK WASHING UNIT

ITEM 11001-A

BACK WASHER

1—set of 2 bowls, 33" wide x 7' 4" long inside measurement x 14" deep.
2—sets Nip Rolls—11" dia. x 26" face in #1 & #2 bowl
1—Nip Roll #2 bowl—13" dia. x 28" face, Upper roll Rubber covered. Lower roll Brass
3—brass Nip Rolls 5" dia. x 28" face in each bowl

ITEM 11001-B

BACK WASHER DRYER

Taylor Wadsworth & Co., Lt'd., 9 cylinder—41" C side x 11' 10" long x 7' 6" high containing 9, 23½" dia. x 31" dryer drums
5—pair glass panelled doors & 1 hatch door in top slope.

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Serial 6445—66 inches wide

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2—**P & S** 10' cone willows.

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64—Crompton & Knowles 4x1 automatic looms, 25 harness dobbies, 55" reed space, 52" cloth space, ¾ H.P. motors, sliding bar stop motions, 1½ paperless beams for loom, pick counter etc.

- 24—Crompton & Knowles—4 x 4—48" Jacquard Looms
- 30—Crompton & Knowles—2 x 2—48" Jacquard Looms

  Above Looms complete with paperless beams electric warp stop motion, pick counter, individually motor driven, extended bottom shafts for double lift Jacquards
- 150—Crompton & Knowles—600 hook double lift Jacquard machines.
- 12—Crompton & Knowles, 4 x 1, 52" Looms, roller bearing, shock absorber, high pick-wheel, removable cloth rollers individually motor driven, warp stop motions and pick counters formerly used for tie silks & dress goods.
- 16—56" 4 x 4 Crompton & Knowles Jacquard looms
- 10—4 x 4, 64" Crompton & Knowles Worcester looms, roller bearings—shock absorbers, motor driven, extended bottom shafts for Jacquards
- 200 Universal #90 quillers or coppers, with or without bunch builders, belt driven or motor driven
- Sipp or Atwood winders to wind from skein to spool
- Sipp or Eastwood warpers and creels
- 40—78" 2 x 1 Crompton & Knowles looms. Roller bearing, shock absorber 20 harness, intermediate head, individually motor driven, ¾ h.p. motors
- 120—45" reed space, Draper automatic looms, 2 harness, roller motion gooseneck cutters, Roper let-offs, positive feelers, worm take ups.
- 10—76" 4 x 4 Crompton and Knowles woolen looms, 25 harness, intermediate head, motor driven
- 23—75½" reed space Stafford Automatic bobbin change looms, 2 harness, roller top, ratchet take-up, friction let-off, positive feelers
- 16—64½ reed space Stafford looms as above described

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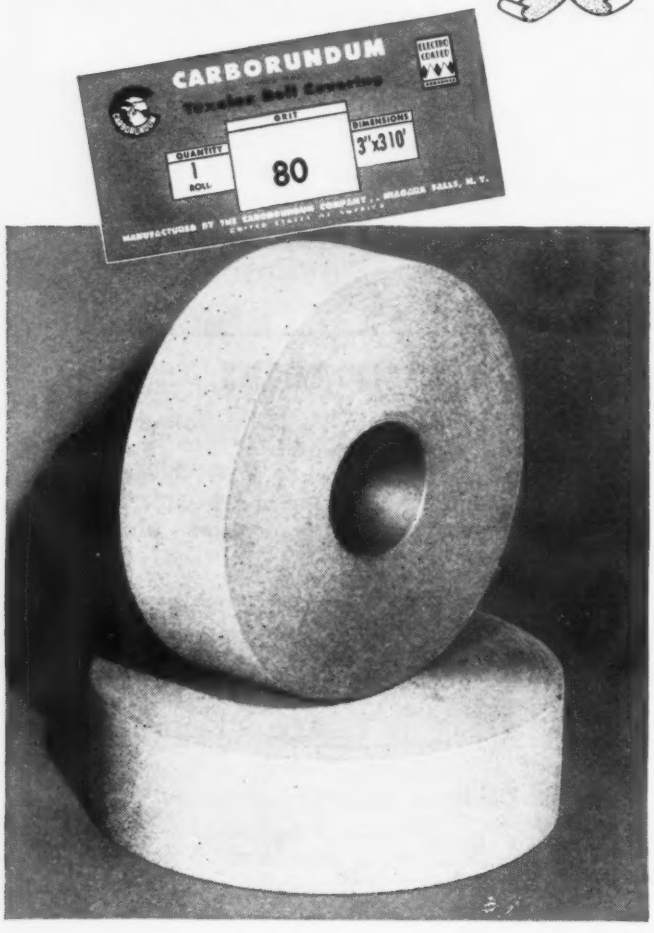

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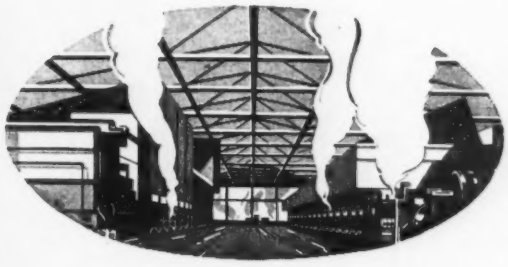

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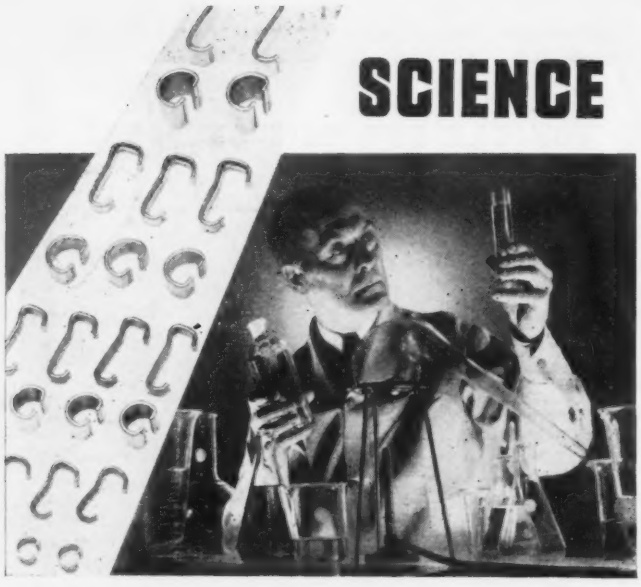

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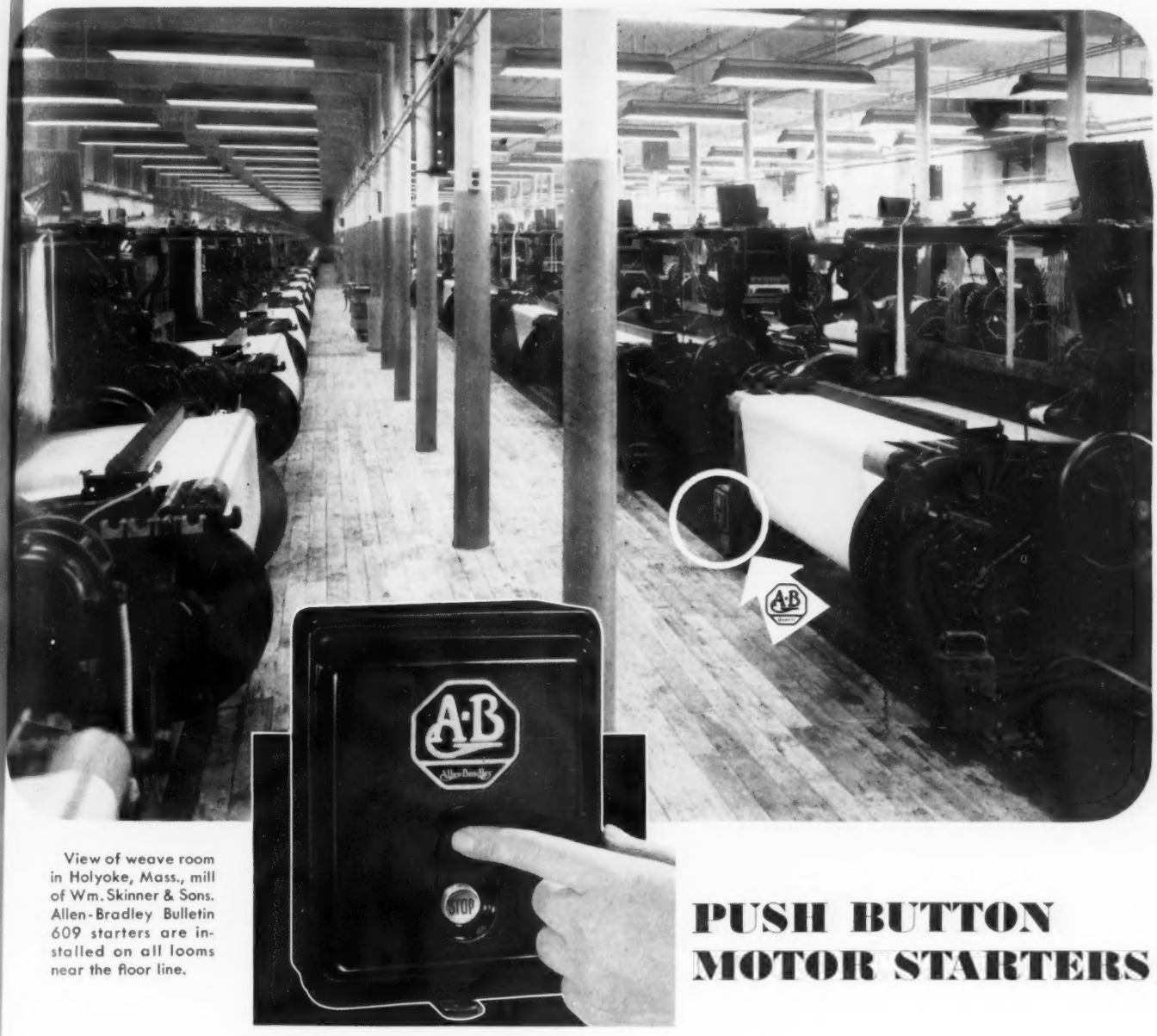

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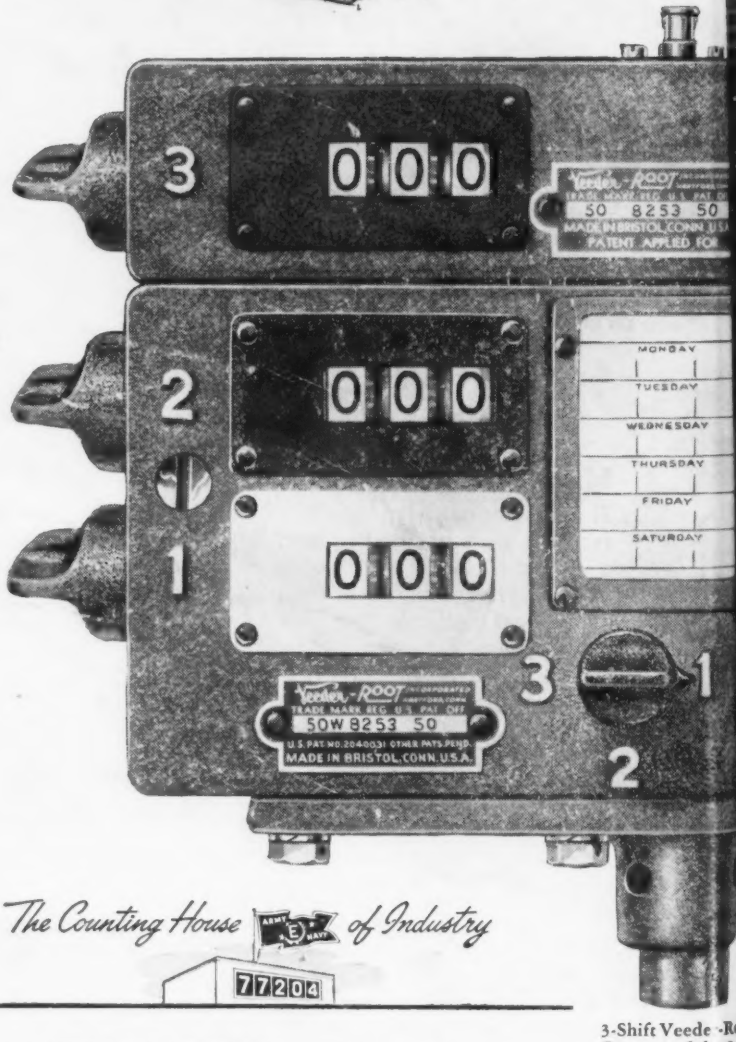

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